APPENDIX B

HEALTH RISK ASSESSMENT

This file: P:\SWB1001\Technical Studies\Air Quality\HRA\Rep_Can_70yr_Inh_AllRec_AllSrc_AllCh_ByRec_Site.txt

Created by HARP Version 1.4d Build 23.09.07
Uses ISC Version 99155
Uses BPIP (Dated: 04112)
Creation date: 3/25/2011 4:45:57 PM

EXCEPTION REPORT
(there have been no changes or exceptions)

INPUT FILES:
Source-Receptor file: P:\SWB1001\Technical Studies\Air Quality\HRA\SDSP.SRC
Averaging period adjustment factors file: not applicable
Emission rates file: EmRates.ems
Site parameters file: P:\SWB1001\Technical Studies\Air Quality\HRA\project.sit

Coordinate system: UTM NAD83

Screening mode is OFF

Exposure duration: 70 year (adult resident)
Analysis method: 80th Percentile Point Estimate (inhalation pathway only)
Health effect: Cancer Risk
Receptor(s): All
Sources(s): All
Chemicals(s): All

SITE PARAMETERS

Inhalation only. Site parameters not applicable.

CHEMICAL CROSS-REFERENCE TABLE AND BACKGROUND CONCENTRATIONS

CHEM	CAS	ABBREVIATION	POLLUTANT NAME	BACKGROUND (ug/m^3)
0001	9901	DieselExhPM	Diesel engine exhaust, particulate matter (Diesel PM)	0.000E+00
0002	106990	1,3-Butadiene	1,3-Butadiene	0.000E+00
0003	71432	Benzene	Benzene	0.000E+00
0004	100414	Ethyl Benzene	Ethyl benzene	0.000E+00
0005	91203	Naphthalene	Naphthalene	0.000E+00
0006	115071	Propylene	Propylene	0.000E+00
0007	100425	Styrene	Styrene	0.000E+00
0008	108883	Toluene	Toluene	0.000E+00
0009	1330207	Xylenes	Xylenes (mixed)	0.000E+00
0010	88101	PM2.5	Particulate Matter 2.5 Microns or Less	0.000E+00

CHEMICAL HEALTH VALUES

CHEM	CAS	ABBREVIATION	CancerPF(Inh) (mg/kg-d)^-1	CancerPF(Oral) (mg/kg-d)^-1	ChronicREL(Inh) ug/m^3	ChronicREL(Oral) mg/kg-d	AcuteREL ug/m^3
0001	9901	DieselExhPM	1.10E+00	*	5.00E+00	*	*
0002	106990	1,3-Butadiene	6.00E-01	*	2.00E+01	*	*
0003	71432	Benzene	1.00E-01	*	6.00E+01	*	1.30E+03
0004	100414	Ethyl Benzene	8.70E-03	*	2.00E+03	*	*
0005	91203	Naphthalene	1.20E-01	*	9.00E+00	*	*
0006	115071	Propylene	*	*	3.00E+03	*	*
0007	100425	Styrene	*	*	9.00E+02	*	2.10E+04
0008	108883	Toluene	*	*	3.00E+02	*	3.70E+04
0009	1330207	Xylenes	*	*	7.00E+02	*	2.20E+04

0010 88101   PM2.5   *   *   *   *   *

EMISSIONS DATA SOURCE: Emission rates loaded from file: P:\SWB1001\Technical Studies\Air Quality\HRA\EmRates.ems
CHEMICALS ADDED OR DELETED: none

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE1_01 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE1_02 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE1_03 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE1_04 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7

1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE1_05 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE1_06 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE5_01 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE5_02 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_03 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_04 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_05 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_06 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_07 STACK 1 EMS (lbs/yr)

SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE5_08 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE5_09 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE5_10 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE5_11 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)

9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_07 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_08 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

CANCER RISK REPORT

REC	INHAL	DERM	SOIL	MOTHER	FISH	WATER	VEG	DAIRY	BEEF	CHICK	PIG	EGG	MEAT	ORAL	TOT
0001	1.45E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.45E-
0002	5.85E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.85E-
0003	4.22E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.22E-
0004	2.17E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.17E-
0005	1.88E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.88E-
0006	1.10E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.10E-
0007	2.79E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.79E-
0008	2.28E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.28E-
0009	7.25E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.25E-
0010	5.30E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.30E-

```
This file: P:\SWB1001\Technical Studies\Air Quality\HRA\Rep_Can_30yr_Avg_AllRec_AllSrc_AllCh_ByRec_Site.txt

Created by HARP Version 1.4d  Build 23.09.07
Uses ISC Version 99155
Uses BPIP (Dated: 04112)
Creation date: 3/25/2011 4:49:05 PM


EXCEPTION REPORT
   (there have been no changes or exceptions)

INPUT FILES:
   Source-Receptor file: P:\SWB1001\Technical Studies\Air Quality\HRA\SDSP.SRC
   Averaging period adjustment factors file: not applicable
   Emission rates file: EmRates.ems
   Site parameters file: P:\SWB1001\Technical Studies\Air Quality\HRA\project.sit

Coordinate system: UTM NAD83

Screening mode is OFF

Exposure duration: 30 year (adult resident)
Analysis method:   Average point estimate
Health effect:     Cancer Risk
Receptor(s):       All
Sources(s):        All
Chemicals(s):      All

SITE PARAMETERS

DEPOSITION

   Deposition rate (m/s)             0.05

DRINKING WATER

*** Pathway disabled ***

FISH

*** Pathway disabled ***

PASTURE

*** Pathway disabled ***

HOME GROWN PRODUCE

*** Pathway disabled ***

PIGS, CHICKENS AND EGGS

*** Pathway disabled ***

DERMAL ABSORPTION

*** Pathway disabled ***
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SOIL INGESTION

*** Pathway disabled ***

MOTHER'S MILK

*** Pathway disabled ***

CHEMICAL CROSS-REFERENCE TABLE AND BACKGROUND CONCENTRATIONS

CHEM	CAS	ABBREVIATION	POLLUTANT NAME	BACKGROUND (ug/m^3)
0001	9901	DieselExhPM	Diesel engine exhaust, particulate matter (Diesel PM)	0.000E+00
0002	106990	1,3-Butadiene	1,3-Butadiene	0.000E+00
0003	71432	Benzene	Benzene	0.000E+00
0004	100414	Ethyl Benzene	Ethyl benzene	0.000E+00
0005	91203	Naphthalene	Naphthalene	0.000E+00
0006	115071	Propylene	Propylene	0.000E+00
0007	100425	Styrene	Styrene	0.000E+00
0008	108883	Toluene	Toluene	0.000E+00
0009	1330207	Xylenes	Xylenes (mixed)	0.000E+00
0010	88101	PM2.5	Particulate Matter 2.5 Microns or Less	0.000E+00

CHEMICAL HEALTH VALUES

CHEM	CAS	ABBREVIATION	CancerPF(Inh) (mg/kg-d)^-1	CancerPF(Oral) (mg/kg-d)^-1	ChronicREL(Inh) ug/m^3	ChronicREL(Oral) mg/kg-d	AcuteREL ug/m^3
0001	9901	DieselExhPM	1.10E+00	*	5.00E+00	*	*
0002	106990	1,3-Butadiene	6.00E-01	*	2.00E+01	*	*
0003	71432	Benzene	1.00E-01	*	6.00E+01	*	1.30E+03
0004	100414	Ethyl Benzene	8.70E-03	*	2.00E+03	*	*
0005	91203	Naphthalene	1.20E-01	*	9.00E+00	*	*
0006	115071	Propylene	*	*	3.00E+03	*	*
0007	100425	Styrene	*	*	9.00E+02	*	2.10E+04
0008	108883	Toluene	*	*	3.00E+02	*	3.70E+04
0009	1330207	Xylenes	*	*	7.00E+02	*	2.20E+04
0010	88101	PM2.5	*	*	*	*	*

EMISSIONS DATA SOURCE: Emission rates loaded from file: P:\SWB1001\Technical Studies\Air Quality\HRA\EmRates.ems
CHEMICALS ADDED OR DELETED: none

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE1_01 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE1_02 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)

9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_03 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_04 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_05 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_06 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8

71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE5_01 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE5_02 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE5_03 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE5_04 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8

91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_05 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_06 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_07 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_08 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7

100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_09 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_10 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_11 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_07 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7

1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_08 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

CANCER RISK REPORT

REC	INHAL	DERM	SOIL	MOTHER	FISH	WATER	VEG	DAIRY	BEEF	CHICK	PIG	EGG	MEAT	ORAL	TOT
0001	5.57E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.57E-
0002	2.25E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.25E-
0003	1.62E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.62E-
0004	8.33E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.33E-
0005	7.22E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.22E-
0006	4.22E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.22E-
0007	1.07E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E-
0008	8.78E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.78E-
0009	2.79E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.79E-
0010	2.04E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.04E-

```
This file: P:\SWB1001\Technical Studies\Air Quality\HRA\Rep_Can_9yrC_Avg_AllRec_AllSrc_AllCh_ByRec_Site.txt

Created by HARP Version 1.4d  Build 23.09.07
Uses ISC Version 99155
Uses BPIP (Dated: 04112)
Creation date: 3/25/2011 4:49:43 PM


EXCEPTION REPORT
   (there have been no changes or exceptions)

INPUT FILES:
   Source-Receptor file: P:\SWB1001\Technical Studies\Air Quality\HRA\SDSP.SRC
   Averaging period adjustment factors file: not applicable
   Emission rates file: EmRates.ems
   Site parameters file: P:\SWB1001\Technical Studies\Air Quality\HRA\project.sit

Coordinate system: UTM NAD83

Screening mode is OFF

Exposure duration: 9 year (child resident)
Analysis method:   Average point estimate
Health effect:     Cancer Risk
Receptor(s):       All
Sources(s):        All
Chemicals(s):      All

SITE PARAMETERS

DEPOSITION

   Deposition rate (m/s)             0.05

DRINKING WATER

*** Pathway disabled ***

FISH

*** Pathway disabled ***

PASTURE

*** Pathway disabled ***

HOME GROWN PRODUCE

*** Pathway disabled ***

PIGS, CHICKENS AND EGGS

*** Pathway disabled ***

DERMAL ABSORPTION

*** Pathway disabled ***
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SOIL INGESTION

*** Pathway disabled ***

MOTHER'S MILK

*** Pathway disabled ***

CHEMICAL CROSS-REFERENCE TABLE AND BACKGROUND CONCENTRATIONS

CHEM	CAS	ABBREVIATION	POLLUTANT NAME	BACKGROUND (ug/m^3)
0001	9901	DieselExhPM	Diesel engine exhaust, particulate matter (Diesel PM)	0.000E+00
0002	106990	1,3-Butadiene	1,3-Butadiene	0.000E+00
0003	71432	Benzene	Benzene	0.000E+00
0004	100414	Ethyl Benzene	Ethyl benzene	0.000E+00
0005	91203	Naphthalene	Naphthalene	0.000E+00
0006	115071	Propylene	Propylene	0.000E+00
0007	100425	Styrene	Styrene	0.000E+00
0008	108883	Toluene	Toluene	0.000E+00
0009	1330207	Xylenes	Xylenes (mixed)	0.000E+00
0010	88101	PM2.5	Particulate Matter 2.5 Microns or Less	0.000E+00

CHEMICAL HEALTH VALUES

CHEM	CAS	ABBREVIATION	CancerPF(Inh) (mg/kg-d)^-1	CancerPF(Oral) (mg/kg-d)^-1	ChronicREL(Inh) ug/m^3	ChronicREL(Oral) mg/kg-d	AcuteREL ug/m^3
0001	9901	DieselExhPM	1.10E+00	*	5.00E+00	*	*
0002	106990	1,3-Butadiene	6.00E-01	*	2.00E+01	*	*
0003	71432	Benzene	1.00E-01	*	6.00E+01	*	1.30E+03
0004	100414	Ethyl Benzene	8.70E-03	*	2.00E+03	*	*
0005	91203	Naphthalene	1.20E-01	*	9.00E+00	*	*
0006	115071	Propylene	*	*	3.00E+03	*	*
0007	100425	Styrene	*	*	9.00E+02	*	2.10E+04
0008	108883	Toluene	*	*	3.00E+02	*	3.70E+04
0009	1330207	Xylenes	*	*	7.00E+02	*	2.20E+04
0010	88101	PM2.5	*	*	*	*	*

EMISSIONS DATA SOURCE: Emission rates loaded from file: P:\SWB1001\Technical Studies\Air Quality\HRA\EmRates.ems
CHEMICALS ADDED OR DELETED: none

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_01 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_02 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)

9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_03 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_04 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_05 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_06 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8

71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_01 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_02 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_03 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_04 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8

91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_05 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_06 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_07 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_08 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7

100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_09 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_10 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_11 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_07 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7

1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_08 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

CANCER RISK REPORT

REC	INHAL	DERM	SOIL	MOTHER	FISH	WATER	VEG	DAIRY	BEEF	CHICK	PIG	EGG	MEAT	ORAL	TOT
0001	2.79E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.79E-
0002	1.13E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.13E-
0003	8.11E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.11E-
0004	4.17E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.17E-
0005	3.61E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.61E-
0006	2.11E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.11E-
0007	5.37E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.37E-
0008	4.39E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.39E-
0009	1.40E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.40E-
0010	1.02E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.02E-

```
This file: P:\SWB1001\Technical Studies\Air Quality\HRA\Rep_Chr_Res_Avg_AllRec_AllSrc_AllCh_ByRec_Site.txt

Created by HARP Version 1.4d  Build 23.09.07
Uses ISC Version 99155
Uses BPIP (Dated: 04112)
Creation date: 3/25/2011 4:45:49 PM


EXCEPTION REPORT
   (there have been no changes or exceptions)

INPUT FILES:
   Source-Receptor file: P:\SWB1001\Technical Studies\Air Quality\HRA\SDSP.SRC
   Averaging period adjustment factors file: not applicable
   Emission rates file: EmRates.ems
   Site parameters file: P:\SWB1001\Technical Studies\Air Quality\HRA\project.sit

Coordinate system: UTM NAD83

Screening mode is OFF

Exposure duration: resident
Analysis method:   Average Point Estimate
Health effect:     Chronic HI
Receptor(s):       All
Sources(s):        All
Chemicals(s):      All

SITE PARAMETERS

DEPOSITION

   Deposition rate (m/s)            0.05

DRINKING WATER

*** Pathway disabled ***

FISH

*** Pathway disabled ***

PASTURE

*** Pathway disabled ***

HOME GROWN PRODUCE

*** Pathway disabled ***

PIGS, CHICKENS AND EGGS

*** Pathway disabled ***

DERMAL ABSORPTION

*** Pathway disabled ***
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SOIL INGESTION

*** Pathway disabled ***

MOTHER'S MILK

*** Pathway disabled ***

CHEMICAL CROSS-REFERENCE TABLE AND BACKGROUND CONCENTRATIONS

CHEM	CAS	ABBREVIATION	POLLUTANT NAME	BACKGROUND (ug/m^3)
0001	9901	DieselExhPM	Diesel engine exhaust, particulate matter (Diesel PM)	0.000E+00
0002	106990	1,3-Butadiene	1,3-Butadiene	0.000E+00
0003	71432	Benzene	Benzene	0.000E+00
0004	100414	Ethyl Benzene	Ethyl benzene	0.000E+00
0005	91203	Naphthalene	Naphthalene	0.000E+00
0006	115071	Propylene	Propylene	0.000E+00
0007	100425	Styrene	Styrene	0.000E+00
0008	108883	Toluene	Toluene	0.000E+00
0009	1330207	Xylenes	Xylenes (mixed)	0.000E+00
0010	88101	PM2.5	Particulate Matter 2.5 Microns or Less	0.000E+00

CHEMICAL HEALTH VALUES

CHEM	CAS	ABBREVIATION	CancerPF(Inh) (mg/kg-d)^-1	CancerPF(Oral) (mg/kg-d)^-1	ChronicREL(Inh) ug/m^3	ChronicREL(Oral) mg/kg-d	AcuteREL ug/m^3
0001	9901	DieselExhPM	1.10E+00	*	5.00E+00	*	*
0002	106990	1,3-Butadiene	6.00E-01	*	2.00E+01	*	*
0003	71432	Benzene	1.00E-01	*	6.00E+01	*	1.30E+03
0004	100414	Ethyl Benzene	8.70E-03	*	2.00E+03	*	*
0005	91203	Naphthalene	1.20E-01	*	9.00E+00	*	*
0006	115071	Propylene	*	*	3.00E+03	*	*
0007	100425	Styrene	*	*	9.00E+02	*	2.10E+04
0008	108883	Toluene	*	*	3.00E+02	*	3.70E+04
0009	1330207	Xylenes	*	*	7.00E+02	*	2.20E+04
0010	88101	PM2.5	*	*	*	*	*

EMISSIONS DATA SOURCE: Emission rates loaded from file: P:\SWB1001\Technical Studies\Air Quality\HRA\EmRates.ems
CHEMICALS ADDED OR DELETED: none

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_01 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_02 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)

9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_03 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_04 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_05 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_06 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8

71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_01 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_02 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_03 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_04 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8

91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_05 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_06 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_07 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_08 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7

100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE5_09 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE5_10 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE5_11 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE1_07 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7

1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE1_08 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

CHRONIC HI REPORT

REC	CV	CNS	BONE	DEVEL	ENDO	EYE	GILV	IMMUN	KIDN	REPRO	RESP	SKIN	BLOOD	MAX
0001	0.00E+00	8.35E-08	0.00E+00	7.77E-08	6.49E-10	0.00E+00	6.49E-10	0.00E+00	6.49E-10	3.33E-08	9.09E-05	0.00E+00	5.33E-08	9.09E-05
0002	0.00E+00	3.37E-08	0.00E+00	3.13E-08	2.62E-10	0.00E+00	2.62E-10	0.00E+00	2.62E-10	1.34E-08	3.67E-05	0.00E+00	2.15E-08	3.67E-05
0003	0.00E+00	2.43E-08	0.00E+00	2.26E-08	1.89E-10	0.00E+00	1.89E-10	0.00E+00	1.89E-10	9.68E-09	2.64E-05	0.00E+00	1.55E-08	2.64E-05
0004	0.00E+00	1.24E-08	0.00E+00	1.16E-08	9.70E-11	0.00E+00	9.70E-11	0.00E+00	9.70E-11	4.96E-09	1.36E-05	0.00E+00	7.95E-09	1.36E-05
0005	0.00E+00	1.08E-08	0.00E+00	1.00E-08	8.40E-11	0.00E+00	8.40E-11	0.00E+00	8.40E-11	4.30E-09	1.18E-05	0.00E+00	6.89E-09	1.18E-05
0006	0.00E+00	6.30E-09	0.00E+00	5.87E-09	4.91E-11	0.00E+00	4.91E-11	0.00E+00	4.91E-11	2.51E-09	6.88E-06	0.00E+00	4.03E-09	6.88E-06
0007	0.00E+00	1.61E-07	0.00E+00	1.49E-07	1.25E-09	0.00E+00	1.25E-09	0.00E+00	1.25E-09	6.40E-08	1.75E-04	0.00E+00	1.02E-07	1.75E-04
0008	0.00E+00	1.31E-07	0.00E+00	1.22E-07	1.02E-09	0.00E+00	1.02E-09	0.00E+00	1.02E-09	5.23E-08	1.43E-04	0.00E+00	8.38E-08	1.43E-04
0009	0.00E+00	4.17E-08	0.00E+00	3.88E-08	3.25E-10	0.00E+00	3.25E-10	0.00E+00	3.25E-10	1.66E-08	4.55E-05	0.00E+00	2.66E-08	4.55E-05
0010	0.00E+00	3.04E-08	0.00E+00	2.83E-08	2.37E-10	0.00E+00	2.37E-10	0.00E+00	2.37E-10	1.21E-08	3.32E-05	0.00E+00	1.94E-08	3.32E-05

This file: P:\SWB1001\Technical Studies\Air Quality\HRA\Rep_Acu_AllRec_AllSrc_AllCh_ByRec.txt

Created by HARP Version 1.4d Build 23.09.07
Uses ISC Version 99155
Uses BPIP (Dated: 04112)
Creation date: 3/25/2011 4:45:43 PM

EXCEPTION REPORT
(there have been no changes or exceptions)

INPUT FILES:
Source-Receptor file: P:\SWB1001\Technical Studies\Air Quality\HRA\SDSP.SRC
Averaging period adjustment factors file: not applicable
Emission rates file: EmRates.ems
Site parameters file: P:\SWB1001\Technical Studies\Air Quality\HRA\project.sit

Coordinate system: UTM NAD83

Screening mode is OFF

Analysis method: Point Estimate
Health effect: Acute HI Simple (Concurrent Max.)
Receptor(s):   All
Sources(s):   All
Chemicals(s):   All

CHEMICAL CROSS-REFERENCE TABLE AND BACKGROUND CONCENTRATIONS

CHEM	CAS	ABBREVIATION	POLLUTANT NAME	BACKGROUND (ug/m^3)
0001	9901	DieselExhPM	Diesel engine exhaust, particulate matter (Diesel PM)	0.000E+00
0002	106990	1,3-Butadiene	1,3-Butadiene	0.000E+00
0003	71432	Benzene	Benzene	0.000E+00
0004	100414	Ethyl Benzene	Ethyl benzene	0.000E+00
0005	91203	Naphthalene	Naphthalene	0.000E+00
0006	115071	Propylene	Propylene	0.000E+00
0007	100425	Styrene	Styrene	0.000E+00
0008	108883	Toluene	Toluene	0.000E+00
0009	1330207	Xylenes	Xylenes (mixed)	0.000E+00
0010	88101	PM2.5	Particulate Matter 2.5 Microns or Less	0.000E+00

CHEMICAL HEALTH VALUES

CHEM	CAS	ABBREVIATION	CancerPF(Inh) (mg/kg-d)^-1	CancerPF(Oral) (mg/kg-d)^-1	ChronicREL(Inh) ug/m^3	ChronicREL(Oral) mg/kg-d	AcuteREL ug/m^3
0001	9901	DieselExhPM	1.10E+00	*	5.00E+00	*	*
0002	106990	1,3-Butadiene	6.00E-01	*	2.00E+01	*	*
0003	71432	Benzene	1.00E-01	*	6.00E+01	*	1.30E+03
0004	100414	Ethyl Benzene	8.70E-03	*	2.00E+03	*	*
0005	91203	Naphthalene	1.20E-01	*	9.00E+00	*	*
0006	115071	Propylene	*	*	3.00E+03	*	*
0007	100425	Styrene	*	*	9.00E+02	*	2.10E+04
0008	108883	Toluene	*	*	3.00E+02	*	3.70E+04
0009	1330207	Xylenes	*	*	7.00E+02	*	2.20E+04
0010	88101	PM2.5	*	*	*	*	*

EMISSIONS DATA SOURCE: Emission rates loaded from file: P:\SWB1001\Technical Studies\Air Quality\HRA\EmRates.ems
CHEMICALS ADDED OR DELETED: none

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_01 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_02 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_03 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_04 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE1_05 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE1_06 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE5_01 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE5_02 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE5_03 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5

106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_04 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_05 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_06 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7
100414	Ethyl Benzene	1		6.46E-4	7.37E-8
91203	Naphthalene	1		2.89E-5	3.30E-9
115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1 DEV=* PRO=* STK=1 NAME=SITE5_07 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		2.26E-1	2.58E-5
106990	1,3-Butadiene	1		3.31E-4	3.78E-8
71432	Benzene	1		1.59E-3	1.81E-7

```
100414          Ethyl Benzene                  1                         6.46E-4          7.37E-8
91203           Naphthalene                    1                         2.89E-5          3.30E-9
115071          Propylene                      1                         1.88E-3          2.15E-7
100425          Styrene                        1                         7.59E-5          8.66E-9
108883          Toluene                        1                         3.54E-3          4.04E-7
1330207         Xylenes                        1                         2.19E-3          2.50E-7
88101           PM2.5                          1                         2.37E-1          2.71E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE5_08 STACK 1  EMS (lbs/yr)
SOURCE MULTIPLIER=1
CAS             ABBREV                MULTIPLIER     BG (ug/m^3)   AVRG (lbs/yr)    MAX (lbs/hr)
9901            DieselExhPM                    1                         2.26E-1          2.58E-5
106990          1,3-Butadiene                  1                         3.31E-4          3.78E-8
71432           Benzene                        1                         1.59E-3          1.81E-7
100414          Ethyl Benzene                  1                         6.46E-4          7.37E-8
91203           Naphthalene                    1                         2.89E-5          3.30E-9
115071          Propylene                      1                         1.88E-3          2.15E-7
100425          Styrene                        1                         7.59E-5          8.66E-9
108883          Toluene                        1                         3.54E-3          4.04E-7
1330207         Xylenes                        1                         2.19E-3          2.50E-7
88101           PM2.5                          1                         2.37E-1          2.71E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE5_09 STACK 1  EMS (lbs/yr)
SOURCE MULTIPLIER=1
CAS             ABBREV                MULTIPLIER     BG (ug/m^3)   AVRG (lbs/yr)    MAX (lbs/hr)
9901            DieselExhPM                    1                         2.26E-1          2.58E-5
106990          1,3-Butadiene                  1                         3.31E-4          3.78E-8
71432           Benzene                        1                         1.59E-3          1.81E-7
100414          Ethyl Benzene                  1                         6.46E-4          7.37E-8
91203           Naphthalene                    1                         2.89E-5          3.30E-9
115071          Propylene                      1                         1.88E-3          2.15E-7
100425          Styrene                        1                         7.59E-5          8.66E-9
108883          Toluene                        1                         3.54E-3          4.04E-7
1330207         Xylenes                        1                         2.19E-3          2.50E-7
88101           PM2.5                          1                         2.37E-1          2.71E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE5_10 STACK 1  EMS (lbs/yr)
SOURCE MULTIPLIER=1
CAS             ABBREV                MULTIPLIER     BG (ug/m^3)   AVRG (lbs/yr)    MAX (lbs/hr)
9901            DieselExhPM                    1                         2.26E-1          2.58E-5
106990          1,3-Butadiene                  1                         3.31E-4          3.78E-8
71432           Benzene                        1                         1.59E-3          1.81E-7
100414          Ethyl Benzene                  1                         6.46E-4          7.37E-8
91203           Naphthalene                    1                         2.89E-5          3.30E-9
115071          Propylene                      1                         1.88E-3          2.15E-7
100425          Styrene                        1                         7.59E-5          8.66E-9
108883          Toluene                        1                         3.54E-3          4.04E-7
1330207         Xylenes                        1                         2.19E-3          2.50E-7
88101           PM2.5                          1                         2.37E-1          2.71E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE5_11 STACK 1  EMS (lbs/yr)
SOURCE MULTIPLIER=1
CAS             ABBREV                MULTIPLIER     BG (ug/m^3)   AVRG (lbs/yr)    MAX (lbs/hr)
9901            DieselExhPM                    1                         2.26E-1          2.58E-5
106990          1,3-Butadiene                  1                         3.31E-4          3.78E-8
71432           Benzene                        1                         1.59E-3          1.81E-7
100414          Ethyl Benzene                  1                         6.46E-4          7.37E-8
91203           Naphthalene                    1                         2.89E-5          3.30E-9
```

115071	Propylene	1		1.88E-3	2.15E-7
100425	Styrene	1		7.59E-5	8.66E-9
108883	Toluene	1		3.54E-3	4.04E-7
1330207	Xylenes	1		2.19E-3	2.50E-7
88101	PM2.5	1		2.37E-1	2.71E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE1_07 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

EMISSIONS FOR FACILITY FAC=1   DEV=*   PRO=*   STK=1   NAME=SITE1_08 STACK 1 EMS (lbs/yr)
SOURCE MULTIPLIER=1

CAS	ABBREV	MULTIPLIER	BG (ug/m^3)	AVRG (lbs/yr)	MAX (lbs/hr)
9901	DieselExhPM	1		1.19E-1	1.36E-5
106990	1,3-Butadiene	1		1.74E-4	1.99E-8
71432	Benzene	1		8.36E-4	9.54E-8
100414	Ethyl Benzene	1		3.40E-4	3.88E-8
91203	Naphthalene	1		1.52E-5	1.74E-9
115071	Propylene	1		9.92E-4	1.13E-7
100425	Styrene	1		4.00E-5	4.56E-9
108883	Toluene	1		1.86E-3	2.13E-7
1330207	Xylenes	1		1.15E-3	1.32E-7
88101	PM2.5	1		1.25E-1	1.42E-5

ACUTE HI REPORT

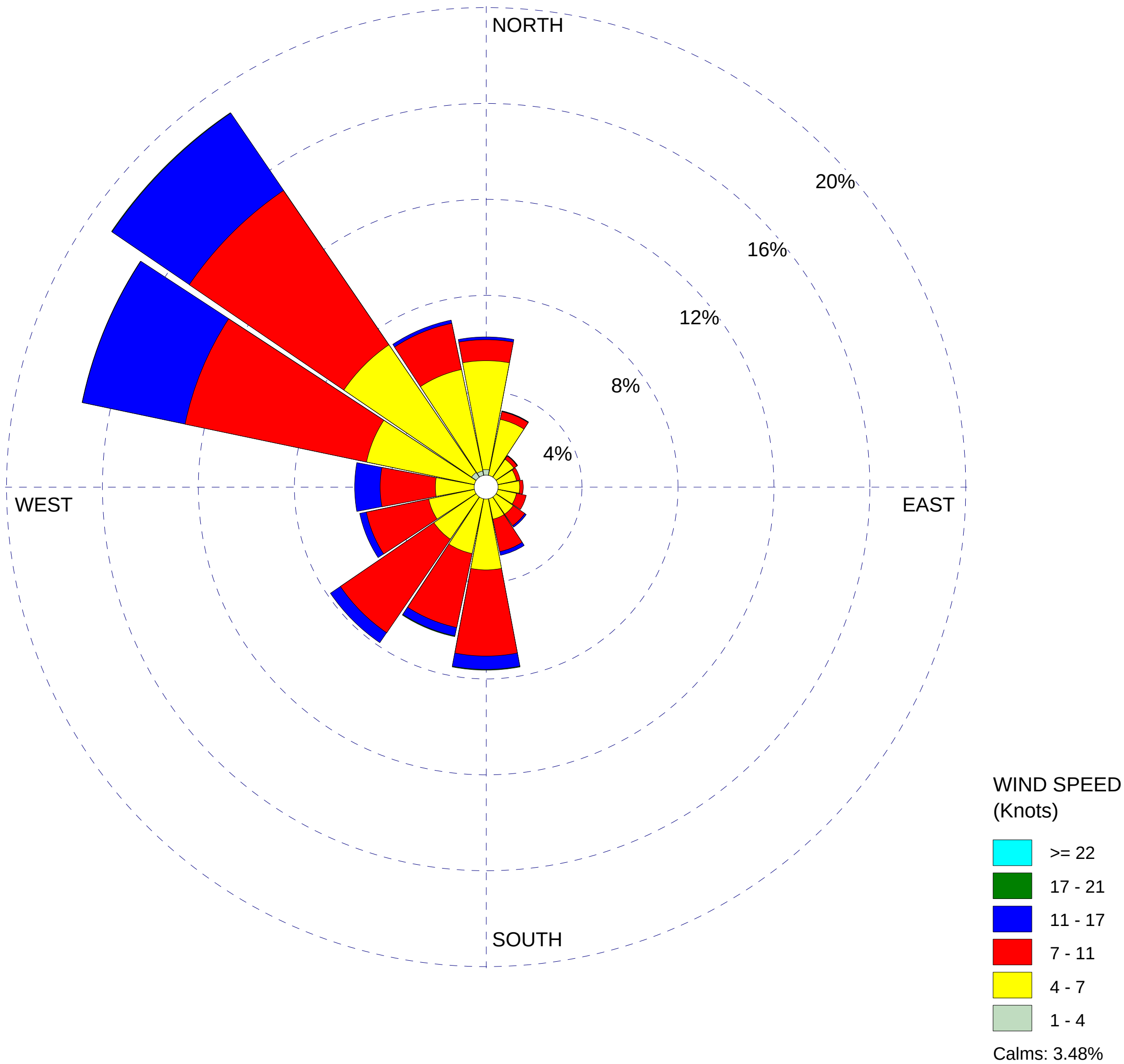
REC	CV	CNS	BONE	DEVEL	ENDO	EYE	GILV	IMMUN	KIDN	REPRO	RESP	SKIN	BLOOD	MAX
0001	0.00E+00	1.09E-08	0.00E+00	1.50E-07	0.00E+00	2.27E-08	0.00E+00	1.39E-07	0.00E+00	1.50E-07	2.27E-08	0.00E+00	1.39E-07	1.50E-07
0002	0.00E+00	6.04E-09	0.00E+00	8.31E-08	0.00E+00	1.26E-08	0.00E+00	7.71E-08	0.00E+00	8.31E-08	1.26E-08	0.00E+00	7.71E-08	8.31E-08
0003	0.00E+00	5.21E-09	0.00E+00	7.16E-08	0.00E+00	1.08E-08	0.00E+00	6.64E-08	0.00E+00	7.16E-08	1.08E-08	0.00E+00	6.64E-08	7.16E-08
0004	0.00E+00	3.62E-09	0.00E+00	4.98E-08	0.00E+00	7.53E-09	0.00E+00	4.61E-08	0.00E+00	4.98E-08	7.53E-09	0.00E+00	4.61E-08	4.98E-08
0005	0.00E+00	2.78E-09	0.00E+00	3.83E-08	0.00E+00	5.79E-09	0.00E+00	3.55E-08	0.00E+00	3.83E-08	5.79E-09	0.00E+00	3.55E-08	3.83E-08
0006	0.00E+00	2.41E-09	0.00E+00	3.31E-08	0.00E+00	5.00E-09	0.00E+00	3.07E-08	0.00E+00	3.31E-08	5.00E-09	0.00E+00	3.07E-08	3.31E-08
0007	0.00E+00	1.64E-08	0.00E+00	2.25E-07	0.00E+00	3.41E-08	0.00E+00	2.09E-07	0.00E+00	2.25E-07	3.41E-08	0.00E+00	2.09E-07	2.25E-07
0008	0.00E+00	1.41E-08	0.00E+00	1.93E-07	0.00E+00	2.93E-08	0.00E+00	1.79E-07	0.00E+00	1.93E-07	2.93E-08	0.00E+00	1.79E-07	1.93E-07
0009	0.00E+00	6.19E-09	0.00E+00	8.51E-08	0.00E+00	1.29E-08	0.00E+00	7.89E-08	0.00E+00	8.51E-08	1.29E-08	0.00E+00	7.89E-08	8.51E-08
0010	0.00E+00	4.99E-09	0.00E+00	6.86E-08	0.00E+00	1.04E-08	0.00E+00	6.36E-08	0.00E+00	6.86E-08	1.04E-08	0.00E+00	6.36E-08	6.86E-08

WIND ROSE PLOT:

Wind Direction and Speed Data for San Diego, CA
1989 Data

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS: Name: San Diego Lindberg Field Site ID: 23188	DATA PERIOD: **Start Date: 1/1/1989 - 00:00** **End Date: 9/13/1989 - 23:00**	COMPANY NAME: **LSA Associates, Inc.**	
		MODELER: **Ronald Brugger**	
	CALM WINDS: **3.48%**	TOTAL COUNT: **6143 hrs.**	
	AVG. WIND SPEED: **6.87 Knots**	DATE: **3/25/2011**	PROJECT NO.: **SWB1001**

WRPLOT View - Lakes Environmental Software

```
 **MODELOPTs:  RegDFAULT CONC                                                 ELEV


                                            ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay.

 **Model Assumes No FLAGPOLE Receptor Heights.

 **Model Calculates  1 Short Term Average(s) of:   1-HR
     and Calculates PERIOD Averages

 **This Run Includes:     19 Source(s);      19 Source Group(s); and      10 Receptor(s)

 **The Model Assumes A Pollutant Type of:  OTHER

 **Model Set To Continue RUNning After the Setup Testing.

 **Output Options Selected:
          Model Outputs Tables of PERIOD Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     6.10 ;  Decay Coef. =    0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.
```

**MODELOPTs: RegDFAULT CONC   ELEV

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
SITE1_01	0	0.10000E+01	487512.4	3616899.2	1.6	1.52	9.02	0.21	NO	
SITE1_02	0	0.10000E+01	487520.4	3616963.5	2.6	1.52	9.02	0.21	NO	
SITE1_03	0	0.10000E+01	487520.4	3617043.8	4.2	1.52	9.02	0.21	NO	
SITE1_04	0	0.10000E+01	487520.4	3617140.3	5.9	1.52	9.02	0.21	NO	
SITE1_05	0	0.10000E+01	487520.4	3617224.7	8.4	1.52	9.02	0.21	NO	
SITE1_06	0	0.10000E+01	487520.4	3617297.0	10.0	1.52	9.02	0.21	NO	
SITE5_01	0	0.10000E+01	489039.4	3613607.9	1.0	1.52	9.02	0.21	NO	
SITE5_02	0	0.10000E+01	489236.3	3613668.2	3.0	1.52	9.02	0.21	NO	
SITE5_03	0	0.10000E+01	489417.2	3613704.4	5.6	1.52	9.02	0.21	NO	
SITE5_04	0	0.10000E+01	489577.9	3613744.6	7.6	1.52	9.02	0.21	NO	
SITE5_05	0	0.10000E+01	489098.7	3612915.7	3.9	1.52	9.02	0.21	NO	
SITE5_06	0	0.10000E+01	489410.1	3613008.2	7.5	1.52	9.02	0.21	NO	
SITE5_07	0	0.10000E+01	489698.5	3613085.5	11.1	1.52	9.02	0.21	NO	
SITE5_08	0	0.10000E+01	489653.3	3613308.6	10.6	1.52	9.02	0.21	NO	
SITE5_09	0	0.10000E+01	489611.1	3613540.6	9.1	1.52	9.02	0.21	NO	
SITE5_10	0	0.10000E+01	489713.5	3613784.8	10.4	1.52	9.02	0.21	NO	
SITE5_11	0	0.10000E+01	489846.2	3613817.9	12.1	1.52	9.02	0.21	NO	
SITE1_07	0	0.10000E+01	487601.3	3617140.3	6.1	1.52	9.02	0.21	NO	
SITE1_08	0	0.10000E+01	487685.4	3617140.3	6.6	1.52	9.02	0.21	NO	

**MODELOPTs: RegDFAULT CONC   ELEV

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID	SOURCE IDs
SITE1_01	SITE1_01,
SITE1_02	SITE1_02,
SITE1_03	SITE1_03,
SITE1_04	SITE1_04,
SITE1_05	SITE1_05,
SITE1_06	SITE1_06,
SITE5_01	SITE5_01,
SITE5_02	SITE5_02,
SITE5_03	SITE5_03,
SITE5_04	SITE5_04,
SITE5_05	SITE5_05,
SITE5_06	SITE5_06,
SITE5_07	SITE5_07,
SITE5_08	SITE5_08,
SITE5_09	SITE5_09,

```
SITE5_10  SITE5_10,

SITE5_11  SITE5_11,

SITE1_08  SITE1_08,

SITE1_07  SITE1_07,
```

**MODELOPTs: RegDFAULT CONC   ELEV

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

```
( 489737.1, 3613699.9,      10.7,      10.7,       0.0);        ( 489969.2, 3613736.0,      13.6,      13.6,       0.0);
( 489893.9, 3613947.0,      12.7,      12.7,       0.0);        ( 487561.1, 3617473.3,      14.7,      14.7,       0.0);
( 487618.3, 3617476.3,      14.3,      14.3,       0.0);        ( 487386.3, 3617476.3,      14.3,      14.3,       0.0);
( 487582.2, 3617168.9,       6.8,       6.8,       0.0);        ( 487630.4, 3617168.9,       7.1,       7.1,       0.0);
( 487681.6, 3616985.1,       3.9,       3.9,       0.0);        ( 487751.0, 3616985.1,       4.8,       4.8,       0.0);
```

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: Met Data\SanDiego1989.SFC Met Version: 06341
Profile file: Met Data\SanDiego1989.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 23188 Upper air station no.: 3131
Name: SAN_DIEGO/LINDBERGH_FIELD Name: UNKNOWN
Year: 1989 Year: 1989

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
89	01	01	1	01	-23.8	0.410	-9.000	-9.000	-999.	604.	260.9	0.54	1.75	0.59	2.60	71.	6.1	284.2	2.0
89	01	01	1	02	-14.7	0.193	-9.000	-9.000	-999.	236.	43.8	0.54	1.75	1.00	1.50	98.	6.1	283.8	2.0
89	01	01	1	03	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.54	1.75	1.00	0.00	0.	6.1	282.5	2.0
89	01	01	1	04	-13.8	0.124	-9.000	-9.000	-999.	100.	12.4	0.54	1.75	1.00	1.50	183.	6.1	282.0	2.0
89	01	01	1	05	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.54	1.75	1.00	0.00	0.	6.1	281.4	2.0
89	01	01	1	06	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.54	1.75	1.00	0.00	0.	6.1	280.9	2.0
89	01	01	1	07	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.54	1.75	1.00	0.00	0.	6.1	280.4	2.0
89	01	01	1	08	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.54	1.75	1.00	0.00	0.	6.1	282.5	2.0
89	01	01	1	09	-32.5	0.295	-9.000	-9.000	-999.	369.	71.4	0.54	1.75	1.00	2.10	327.	6.1	283.8	2.0
89	01	01	1	10	-31.7	0.297	-9.000	-9.000	-999.	372.	74.5	0.54	1.75	1.00	2.10	331.	6.1	284.9	2.0
89	01	01	1	11	-55.2	0.571	-9.000	-9.000	-999.	994.	305.2	0.54	1.75	1.00	3.60	334.	6.1	288.8	2.0
89	01	01	1	12	-64.0	0.830	-9.000	-9.000	-999.	1737.	806.1	0.54	1.75	1.00	5.10	306.	6.1	287.0	2.0
89	01	01	1	13	-64.0	0.830	-9.000	-9.000	-999.	1739.	805.3	0.54	1.75	1.00	5.10	323.	6.1	288.8	2.0
89	01	01	1	14	-64.0	0.932	-9.000	-9.000	-999.	2062.	1139.6	0.54	1.75	1.00	5.70	299.	6.1	289.9	2.0
89	01	01	1	15	-62.4	0.830	-9.000	-9.000	-999.	1758.	827.5	0.54	1.75	1.00	5.10	302.	6.1	288.1	2.0
89	01	01	1	16	-22.1	0.671	-9.000	-9.000	-999.	1295.	1231.7	0.54	1.75	0.49	4.10	344.	6.1	288.1	2.0
89	01	01	1	17	25.0	0.441	-9.000	-9.000	-999.	728.	-311.1	0.54	1.75	0.29	2.60	321.	6.1	287.0	2.0
89	01	01	1	18	54.3	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.54	1.75	0.22	0.00	0.	6.1	286.4	2.0
89	01	01	1	19	104.7	0.304	-9.000	-9.000	-999.	386.	-24.3	0.54	1.75	0.20	1.50	4.	6.1	285.9	2.0
89	01	01	1	20	158.5	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.54	1.75	0.19	0.00	0.	6.1	285.9	2.0
89	01	01	1	21	115.3	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.54	1.75	0.19	0.00	0.	6.1	284.9	2.0
89	01	01	1	22	144.8	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.54	1.75	0.20	0.00	0.	6.1	284.9	2.0
89	01	01	1	23	80.9	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.54	1.75	0.23	0.00	0.	6.1	283.1	2.0
89	01	01	1	24	33.1	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.54	1.75	0.32	0.00	0.	6.1	283.8	2.0

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
89	01	01	01	6.1	1	71.	2.60	284.3	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE PERIOD (6144 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE1_01 ***
INCLUDING SOURCE(S): SITE1_01,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
489737.15	3613699.86	0.10122	489969.22	3613736.03	0.10656
489893.87	3613947.00	0.12519	487561.08	3617473.32	1.78859
487618.34	3617476.33	1.73705	487386.27	3617476.33	0.98959
487582.18	3617168.91	6.13533	487630.40	3617168.91	4.92113
487681.64	3616985.06	11.34585	487750.96	3616985.06	6.62333

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE PERIOD (6144 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE1_02 ***
INCLUDING SOURCE(S): SITE1_02,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
489737.15	3613699.86	0.09812	489969.22	3613736.03	0.10140
489893.87	3613947.00	0.11705	487561.08	3617473.32	2.20662
487618.34	3617476.33	2.11764	487386.27	3617476.33	1.17610
487582.18	3617168.91	9.60632	487630.40	3617168.91	7.66416
487681.64	3616985.06	15.98387	487750.96	3616985.06	8.29562

**MODELOPTs: RegDFAULT CONC ELEV

*** THE PERIOD (6144 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE1_03 ***
INCLUDING SOURCE(S): SITE1_03,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
489737.15	3613699.86	0.09495	489969.22	3613736.03	0.09612
489893.87	3613947.00	0.10913	487561.08	3617473.32	3.00987
487618.34	3617476.33	2.72367	487386.27	3617476.33	1.56078
487582.18	3617168.91	20.38974	487630.40	3617168.91	14.60070
487681.64	3616985.06	21.84667	487750.96	3616985.06	10.88211

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE PERIOD (6144 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE1_04 ***
INCLUDING SOURCE(S): SITE1_04,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
489737.15	3613699.86	0.09021	489969.22	3613736.03	0.09052
489893.87	3613947.00	0.10129	487561.08	3617473.32	4.70076
487618.34	3617476.33	3.84122	487386.27	3617476.33	2.40295
487582.18	3617168.91	79.53435	487630.40	3617168.91	30.42743
487681.64	3616985.06	17.12399	487750.96	3616985.06	11.30223

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE PERIOD (6144 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE1_05 ***
INCLUDING SOURCE(S): SITE1_05,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
489737.15	3613699.86	0.08849	489969.22	3613736.03	0.08557
489893.87	3613947.00	0.09288	487561.08	3617473.32	7.76391
487618.34	3617476.33	5.86044	487386.27	3617476.33	3.90867
487582.18	3617168.91	100.15812	487630.40	3617168.91	44.21290
487681.64	3616985.06	9.94317	487750.96	3616985.06	8.35022

**MODELOPTs: RegDFAULT CONC ELEV

*** THE PERIOD (6144 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE1_06 ***
INCLUDING SOURCE(S): SITE1_06,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
489737.15	3613699.86	0.08728	489969.22	3613736.03	0.08133
489893.87	3613947.00	0.08966	487561.08	3617473.32	13.49437
487618.34	3617476.33	9.80026	487386.27	3617476.33	6.11512
487582.18	3617168.91	35.49698	487630.40	3617168.91	27.34645
487681.64	3616985.06	6.98399	487750.96	3616985.06	5.88726

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE PERIOD (6144 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: SITE5_01 ***
INCLUDING SOURCE(S):   SITE5_01,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER   IN MICROGRAMS/M**3   **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
489737.15	3613699.86	0.95279	489969.22	3613736.03	0.54382
489893.87	3613947.00	0.61380	487561.08	3617473.32	0.03487
487618.34	3617476.33	0.03574	487386.27	3617476.33	0.03363
487582.18	3617168.91	0.04232	487630.40	3617168.91	0.04216
487681.64	3616985.06	0.04924	487750.96	3616985.06	0.04929

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE PERIOD (6144 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: SITE5_02 ***
INCLUDING SOURCE(S):   SITE5_02,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER   IN MICROGRAMS/M**3   **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
489737.15	3613699.86	1.81899	489969.22	3613736.03	0.88368
489893.87	3613947.00	0.94817	487561.08	3617473.32	0.03518
487618.34	3617476.33	0.03519	487386.27	3617476.33	0.03270
487582.18	3617168.91	0.04565	487630.40	3617168.91	0.04591
487681.64	3616985.06	0.05011	487750.96	3616985.06	0.05047

**MODELOPTs: RegDFAULT CONC ELEV

*** THE PERIOD (6144 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE5_03 ***
INCLUDING SOURCE(S): SITE5_03,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
489737.15	3613699.86	4.66793	489969.22	3613736.03	1.51651
489893.87	3613947.00	1.62271	487561.08	3617473.32	0.03393
487618.34	3617476.33	0.03517	487386.27	3617476.33	0.03316
487582.18	3617168.91	0.04490	487630.40	3617168.91	0.04533
487681.64	3616985.06	0.04927	487750.96	3616985.06	0.04999

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE PERIOD (6144 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: SITE5_04 ***
INCLUDING SOURCE(S):   SITE5_04,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER   IN MICROGRAMS/M**3   **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
489737.15	3613699.86	21.73974	489969.22	3613736.03	3.15633
489893.87	3613947.00	3.30801	487561.08	3617473.32	0.03522
487618.34	3617476.33	0.03559	487386.27	3617476.33	0.03495
487582.18	3617168.91	0.04347	487630.40	3617168.91	0.04422
487681.64	3616985.06	0.04749	487750.96	3616985.06	0.04876

**MODELOPTs: RegDFAULT CONC ELEV

*** THE PERIOD (6144 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE5_05 ***
INCLUDING SOURCE(S): SITE5_05,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
489737.15	3613699.86	0.53628	489969.22	3613736.03	0.41808
489893.87	3613947.00	0.34838	487561.08	3617473.32	0.02795
487618.34	3617476.33	0.02777	487386.27	3617476.33	0.02719
487582.18	3617168.91	0.03366	487630.40	3617168.91	0.03374
487681.64	3616985.06	0.03628	487750.96	3616985.06	0.03641

**MODELOPTs: RegDFAULT CONC ELEV

*** THE PERIOD (6144 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE5_06 ***
INCLUDING SOURCE(S): SITE5_06,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
489737.15	3613699.86	0.86348	489969.22	3613736.03	0.64590
489893.87	3613947.00	0.47804	487561.08	3617473.32	0.02827
487618.34	3617476.33	0.02848	487386.27	3617476.33	0.02806
487582.18	3617168.91	0.03455	487630.40	3617168.91	0.03464
487681.64	3616985.06	0.03730	487750.96	3616985.06	0.03740

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE PERIOD (6144 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: SITE5_07 ***
INCLUDING SOURCE(S):   SITE5_07,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER   IN MICROGRAMS/M**3   **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
489737.15	3613699.86	1.60939	489969.22	3613736.03	1.01246
489893.87	3613947.00	0.82011	487561.08	3617473.32	0.03089
487618.34	3617476.33	0.03110	487386.27	3617476.33	0.03008
487582.18	3617168.91	0.03420	487630.40	3617168.91	0.03446
487681.64	3616985.06	0.03698	487750.96	3616985.06	0.03741

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE PERIOD (6144 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: SITE5_08 ***
INCLUDING SOURCE(S):   SITE5_08,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER   IN MICROGRAMS/M**3   **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
489737.15	3613699.86	3.31558	489969.22	3613736.03	1.71952
489893.87	3613947.00	1.09556	487561.08	3617473.32	0.03342
487618.34	3617476.33	0.03368	487386.27	3617476.33	0.03249
487582.18	3617168.91	0.03717	487630.40	3617168.91	0.03749
487681.64	3616985.06	0.04034	487750.96	3616985.06	0.04088

**MODELOPTs: RegDFAULT CONC ELEV

*** THE PERIOD (6144 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE5_09 ***
INCLUDING SOURCE(S): SITE5_09,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
489737.15	3613699.86	10.05703	489969.22	3613736.03	2.78671
489893.87	3613947.00	1.94912	487561.08	3617473.32	0.03363
487618.34	3617476.33	0.03436	487386.27	3617476.33	0.03335
487582.18	3617168.91	0.04052	487630.40	3617168.91	0.04100
487681.64	3616985.06	0.04415	487750.96	3616985.06	0.04495

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE PERIOD (6144 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE5_10 ***
INCLUDING SOURCE(S): SITE5_10,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
489737.15	3613699.86	84.04176	489969.22	3613736.03	8.65076
489893.87	3613947.00	7.40250	487561.08	3617473.32	0.03835
487618.34	3617476.33	0.03903	487386.27	3617476.33	0.03535
487582.18	3617168.91	0.04091	487630.40	3617168.91	0.04206
487681.64	3616985.06	0.04442	487750.96	3616985.06	0.04633

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE PERIOD (6144 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE5_11 ***
INCLUDING SOURCE(S): SITE5_11,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
489737.15	3613699.86	9.78348	489969.22	3613736.03	34.66307
489893.87	3613947.00	21.63489	487561.08	3617473.32	0.03633
487618.34	3617476.33	0.03740	487386.27	3617476.33	0.03278
487582.18	3617168.91	0.03772	487630.40	3617168.91	0.03891
487681.64	3616985.06	0.04080	487750.96	3616985.06	0.04273

**MODELOPTs: RegDFAULT CONC ELEV

*** THE PERIOD (6144 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE1_08 ***
INCLUDING SOURCE(S): SITE1_08,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
489737.15	3613699.86	0.09791	489969.22	3613736.03	0.09151
489893.87	3613947.00	0.10079	487561.08	3617473.32	2.49713
487618.34	3617476.33	2.97994	487386.27	3617476.33	1.38226
487582.18	3617168.91	28.97759	487630.40	3617168.91	73.80687
487681.64	3616985.06	23.72275	487750.96	3616985.06	26.54744

*** THE PERIOD (6144 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE1_07 ***
INCLUDING SOURCE(S): SITE1_07,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
489737.15	3613699.86	0.09355	489969.22	3613736.03	0.09056
489893.87	3613947.00	0.10057	487561.08	3617473.32	3.49514
487618.34	3617476.33	4.59229	487386.27	3617476.33	1.87673
487582.18	3617168.91	230.33012	487630.40	3617168.91	214.28329
487681.64	3616985.06	24.96802	487750.96	3616985.06	18.19427

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE   1ST HIGHEST 1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: SITE1_01 ***
INCLUDING SOURCE(S):   SITE1_01,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER   IN MICROGRAMS/M**3   **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
489737.15	3613699.86	28.20184	(89022008)	489969.22	3613736.03	14.46133	(89030702)
489893.87	3613947.00	20.24674	(89011803)	487561.08	3617473.32	295.92941	(89010104)
487618.34	3617476.33	313.44130	(89011011)	487386.27	3617476.33	83.96889	(89062009)
487582.18	3617168.91	750.45178	(89011010)	487630.40	3617168.91	144.59798	(89031105)
487681.64	3616985.06	893.29366	(89021411)	487750.96	3616985.06	771.60197	(89011309)

**MODELOPTs: RegDFAULT CONC ELEV

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE1_02 ***
INCLUDING SOURCE(S): SITE1_02,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
489737.15	3613699.86	24.87356	(89022008)	489969.22	3613736.03	17.33534	(89022008)
489893.87	3613947.00	14.18493	(89030702)	487561.08	3617473.32	365.19277	(89010104)
487618.34	3617476.33	377.89125	(89011010)	487386.27	3617476.33	128.90640	(89062009)
487582.18	3617168.91	831.02631	(89011010)	487630.40	3617168.91	588.26323	(89031105)
487681.64	3616985.06	1476.80472	(89011305)	487750.96	3616985.06	935.83000	(89011305)

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE   1ST HIGHEST 1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: SITE1_03 ***
INCLUDING SOURCE(S):   SITE1_03,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER   IN MICROGRAMS/M**3   **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
489737.15	3613699.86	19.71464	(89022008)	489969.22	3613736.03	21.34778	(89022008)
489893.87	3613947.00	16.17993	(89022008)	487561.08	3617473.32	443.91346	(89030409)
487618.34	3617476.33	486.25377	(89011010)	487386.27	3617476.33	238.82735	(89020109)
487582.18	3617168.91	1127.12694	(89031105)	487630.40	3617168.91	1058.76064	(89031105)
487681.64	3616985.06	1083.04155	(89030509)	487750.96	3616985.06	896.42432	(89012609)

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE   1ST HIGHEST 1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: SITE1_04 ***
INCLUDING SOURCE(S):   SITE1_04,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER   IN MICROGRAMS/M**3   **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
489737.15	3613699.86	13.25538	(89022008)	489969.22	3613736.03	22.65335	(89022008)
489893.87	3613947.00	19.67808	(89022008)	487561.08	3617473.32	644.21601	(89030409)
487618.34	3617476.33	445.71874	(89011010)	487386.27	3617476.33	502.31296	(89011903)
487582.18	3617168.91	3837.31858	(89011309)	487630.40	3617168.91	2359.11896	(89013109)
487681.64	3616985.06	964.96838	(89011704)	487750.96	3616985.06	669.09472	(89030504)

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE1_05 ***
INCLUDING SOURCE(S): SITE1_05,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
489737.15	3613699.86	13.31241	(89042803)	489969.22	3613736.03	18.85793	(89022008)
489893.87	3613947.00	16.31670	(89022008)	487561.08	3617473.32	862.77534	(89011010)
487618.34	3617476.33	268.71756	(89011010)	487386.27	3617476.33	772.94948	(89030603)
487582.18	3617168.91	3215.14578	(89011704)	487630.40	3617168.91	2068.48512	(89030509)
487681.64	3616985.06	611.51085	(89022008)	487750.96	3616985.06	531.18768	(89011704)

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE1_06 ***
INCLUDING SOURCE(S): SITE1_06,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
489737.15	3613699.86	14.42677	(89042803)	489969.22	3613736.03	15.27390	(89022008)
489893.87	3613947.00	16.54777	(89022008)	487561.08	3617473.32	1220.07121	(89011010)
487618.34	3617476.33	756.79557	(89031105)	487386.27	3617476.33	635.73329	(89030603)
487582.18	3617168.91	1629.06899	(89021607)	487630.40	3617168.91	1341.49150	(89011803)
487681.64	3616985.06	494.16944	(89031807)	487750.96	3616985.06	407.01058	(89022008)

**MODELOPTs: RegDFAULT CONC ELEV

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE5_01 ***
INCLUDING SOURCE(S): SITE5_01,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
489737.15	3613699.86	272.74704	(89011305)	489969.22	3613736.03	175.27748	(89011305)
489893.87	3613947.00	148.12765	(89011309)	487561.08	3617473.32	14.95583	(89020109)
487618.34	3617476.33	15.92312	(89020109)	487386.27	3617476.33	19.23002	(89011903)
487582.18	3617168.91	14.37667	(89011903)	487630.40	3617168.91	10.94930	(89020109)
487681.64	3616985.06	13.04325	(89011903)	487750.96	3616985.06	9.90819	(89020109)

**MODELOPTs: RegDFAULT CONC ELEV

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE5_02 ***
INCLUDING SOURCE(S): SITE5_02,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
489737.15	3613699.86	374.85299	(89011305)	489969.22	3613736.03	277.10786	(89011305)
489893.87	3613947.00	160.08983	(89011309)	487561.08	3617473.32	25.15789	(89011903)
487618.34	3617476.33	18.59207	(89011903)	487386.27	3617476.33	26.55953	(89011903)
487582.18	3617168.91	19.14367	(89011903)	487630.40	3617168.91	19.24433	(89011903)
487681.64	3616985.06	20.80064	(89011903)	487750.96	3616985.06	20.26086	(89011903)

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE5_03 ***
INCLUDING SOURCE(S): SITE5_03,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
489737.15	3613699.86	453.86299	(89031909)	489969.22	3613736.03	315.38767	(89011305)
489893.87	3613947.00	210.19927	(89021411)	487561.08	3617473.32	23.17120	(89011903)
487618.34	3617476.33	26.16005	(89011903)	487386.27	3617476.33	19.16467	(89030603)
487582.18	3617168.91	15.08396	(89030603)	487630.40	3617168.91	14.55540	(89011903)
487681.64	3616985.06	16.32084	(89030603)	487750.96	3616985.06	17.18338	(89011903)

*** THE   1ST HIGHEST 1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: SITE5_04 ***
INCLUDING SOURCE(S):   SITE5_04,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER   IN MICROGRAMS/M**3   **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
489737.15	3613699.86	1362.73973	(89012609)	489969.22	3613736.03	335.09966	(89031909)
489893.87	3613947.00	504.34636	(89031908)	487561.08	3617473.32	18.97903	(89030603)
487618.34	3617476.33	14.93252	(89030603)	487386.27	3617476.33	22.08120	(89030603)
487582.18	3617168.91	18.60993	(89030603)	487630.40	3617168.91	18.69106	(89030603)
487681.64	3616985.06	20.01043	(89030603)	487750.96	3616985.06	20.05196	(89030603)

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE5_05 ***
INCLUDING SOURCE(S): SITE5_05,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
489737.15	3613699.86	90.61971	(89031105)	489969.22	3613736.03	98.58733	(89040409)
489893.87	3613947.00	90.80989	(89031105)	487561.08	3617473.32	10.22055	(89020109)
487618.34	3617476.33	8.61449	(89020109)	487386.27	3617476.33	11.07377	(89020109)
487582.18	3617168.91	7.35542	(89020109)	487630.40	3617168.91	7.19932	(89020109)
487681.64	3616985.06	7.73518	(89020109)	487750.96	3616985.06	7.24827	(89020109)

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE5_06 ***
INCLUDING SOURCE(S): SITE5_06,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
489737.15	3613699.86	33.69237	(89031105)	489969.22	3613736.03	144.87326	(89031105)
489893.87	3613947.00	26.07742	(89031105)	487561.08	3617473.32	10.85721	(89011903)
487618.34	3617476.33	7.81295	(89020109)	487386.27	3617476.33	18.24788	(89011903)
487582.18	3617168.91	13.94383	(89011903)	487630.40	3617168.91	12.71204	(89011903)
487681.64	3616985.06	14.42062	(89011903)	487750.96	3616985.06	12.17304	(89011903)

**MODELOPTs: RegDFAULT CONC ELEV

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE5_07 ***
INCLUDING SOURCE(S): SITE5_07,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
489737.15	3613699.86	249.21086	(89010104)	489969.22	3613736.03	26.33533	(89011010)
489893.87	3613947.00	149.92264	(89011010)	487561.08	3617473.32	13.06429	(89011903)
487618.34	3617476.33	13.80742	(89011903)	487386.27	3617476.33	10.03619	(89030603)
487582.18	3617168.91	10.82219	(89011903)	487630.40	3617168.91	12.42235	(89011903)
487681.64	3616985.06	11.78839	(89011903)	487750.96	3616985.06	14.20534	(89011903)

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE5_08 ***
INCLUDING SOURCE(S): SITE5_08,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
489737.15	3613699.86	450.07500	(89011010)	489969.22	3613736.03	281.48727	(89031105)
489893.87	3613947.00	55.97636	(89011010)	487561.08	3617473.32	12.56079	(89011903)
487618.34	3617476.33	13.99426	(89011903)	487386.27	3617476.33	12.74450	(89030603)
487582.18	3617168.91	13.52218	(89030603)	487630.40	3617168.91	11.98923	(89030603)
487681.64	3616985.06	14.50609	(89030603)	487750.96	3616985.06	12.93977	(89011903)

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE5_09 ***
INCLUDING SOURCE(S): SITE5_09,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
489737.15	3613699.86	985.02458	(89031105)	489969.22	3613736.03	323.33073	(89021411)
489893.87	3613947.00	318.70949	(89031105)	487561.08	3617473.32	12.48152	(89030603)
487618.34	3617476.33	15.01210	(89011903)	487386.27	3617476.33	18.23549	(89030603)
487582.18	3617168.91	16.85556	(89030603)	487630.40	3617168.91	15.88034	(89030603)
487681.64	3616985.06	18.18123	(89030603)	487750.96	3616985.06	16.50670	(89030603)

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE5_10 ***
INCLUDING SOURCE(S): SITE5_10,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
489737.15	3613699.86	3264.69332	(89010908)	489969.22	3613736.03	756.66520	(89012609)
489893.87	3613947.00	807.73274	(89010809)	487561.08	3617473.32	16.70588	(89030603)
487618.34	3617476.33	16.75470	(89030603)	487386.27	3617476.33	12.33386	(89030603)
487582.18	3617168.91	14.23849	(89030603)	487630.40	3617168.91	16.19023	(89030603)
487681.64	3616985.06	14.70109	(89030603)	487750.96	3616985.06	17.86843	(89030603)

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE   1ST HIGHEST 1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: SITE5_11 ***
INCLUDING SOURCE(S):   SITE5_11,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER   IN MICROGRAMS/M**3   **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
489737.15	3613699.86	321.14153	(89043005)	489969.22	3613736.03	1577.16153	(89030504)
489893.87	3613947.00	1236.16787	(89011010)	487561.08	3617473.32	13.24030	(89030603)
487618.34	3617476.33	15.13619	(89030603)	487386.27	3617476.33	7.84805	(89040709)
487582.18	3617168.91	8.76170	(89040709)	487630.40	3617168.91	9.64032	(89030603)
487681.64	3616985.06	9.02340	(89040709)	487750.96	3616985.06	10.58929	(89030603)

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE1_08 ***
INCLUDING SOURCE(S): SITE1_08,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
489737.15	3613699.86	17.31662	(89042803)	489969.22	3613736.03	21.07107	(89022008)
489893.87	3613947.00	23.13258	(89022008)	487561.08	3617473.32	421.30153	(89011903)
487618.34	3617476.33	183.20640	(89062009)	487386.27	3617476.33	131.20633	(89042904)
487582.18	3617168.91	2336.30543	(89021503)	487630.40	3617168.91	4496.63117	(89022604)
487681.64	3616985.06	1391.48720	(89021505)	487750.96	3616985.06	1380.26636	(89030503)

**MODELOPTs: RegDFAULT CONC ELEV

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SITE1_07 ***
INCLUDING SOURCE(S): SITE1_07,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
489737.15	3613699.86	14.86659	(89042803)	489969.22	3613736.03	23.68501	(89022008)
489893.87	3613947.00	23.12205	(89022008)	487561.08	3617473.32	412.48391	(89011906)
487618.34	3617476.33	689.56686	(89010104)	487386.27	3617476.33	486.64111	(89030603)
487582.18	3617168.91	8562.18949	(89030603)	487630.40	3617168.91	7053.69823	(89010809)
487681.64	3616985.06	1314.11626	(89031807)	487750.96	3616985.06	990.63680	(89011704)

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE SUMMARY OF MAXIMUM PERIOD (6144 HRS) RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC		RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	NETWORK GRID-ID
SITE1_01	1ST HIGHEST VALUE IS	11.34585	AT (	487681.64,	3616985.06,	3.92,	3.92,	0.00)	DC	
	2ND HIGHEST VALUE IS	6.62333	AT (	487750.96,	3616985.06,	4.81,	4.81,	0.00)	DC	
	3RD HIGHEST VALUE IS	6.13533	AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
	4TH HIGHEST VALUE IS	4.92113	AT (	487630.40,	3617168.91,	7.06,	7.06,	0.00)	DC	
	5TH HIGHEST VALUE IS	1.78859	AT (	487561.08,	3617473.32,	14.70,	14.70,	0.00)	DC	
	6TH HIGHEST VALUE IS	1.73705	AT (	487618.34,	3617476.33,	14.32,	14.32,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.98959	AT (	487386.27,	3617476.33,	14.33,	14.33,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.12519	AT (	489893.87,	3613947.00,	12.67,	12.67,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.10656	AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.10122	AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
SITE1_02	1ST HIGHEST VALUE IS	15.98387	AT (	487681.64,	3616985.06,	3.92,	3.92,	0.00)	DC	
	2ND HIGHEST VALUE IS	9.60632	AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
	3RD HIGHEST VALUE IS	8.29562	AT (	487750.96,	3616985.06,	4.81,	4.81,	0.00)	DC	
	4TH HIGHEST VALUE IS	7.66416	AT (	487630.40,	3617168.91,	7.06,	7.06,	0.00)	DC	
	5TH HIGHEST VALUE IS	2.20662	AT (	487561.08,	3617473.32,	14.70,	14.70,	0.00)	DC	
	6TH HIGHEST VALUE IS	2.11764	AT (	487618.34,	3617476.33,	14.32,	14.32,	0.00)	DC	
	7TH HIGHEST VALUE IS	1.17610	AT (	487386.27,	3617476.33,	14.33,	14.33,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.11705	AT (	489893.87,	3613947.00,	12.67,	12.67,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.10140	AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.09812	AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
SITE1_03	1ST HIGHEST VALUE IS	21.84667	AT (	487681.64,	3616985.06,	3.92,	3.92,	0.00)	DC	
	2ND HIGHEST VALUE IS	20.38974	AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
	3RD HIGHEST VALUE IS	14.60070	AT (	487630.40,	3617168.91,	7.06,	7.06,	0.00)	DC	
	4TH HIGHEST VALUE IS	10.88211	AT (	487750.96,	3616985.06,	4.81,	4.81,	0.00)	DC	
	5TH HIGHEST VALUE IS	3.00987	AT (	487561.08,	3617473.32,	14.70,	14.70,	0.00)	DC	
	6TH HIGHEST VALUE IS	2.72367	AT (	487618.34,	3617476.33,	14.32,	14.32,	0.00)	DC	
	7TH HIGHEST VALUE IS	1.56078	AT (	487386.27,	3617476.33,	14.33,	14.33,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.10913	AT (	489893.87,	3613947.00,	12.67,	12.67,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.09612	AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.09495	AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE SUMMARY OF MAXIMUM PERIOD (6144 HRS) RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR,	YR,	ZELEV,	ZHILL,	ZFLAG)	OF TYPE	NETWORK GRID-ID
SITE1_04	1ST HIGHEST VALUE IS	79.53435 AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
	2ND HIGHEST VALUE IS	30.42743 AT (	487630.40,	3617168.91,	7.06,	7.06,	0.00)	DC	
	3RD HIGHEST VALUE IS	17.12399 AT (	487681.64,	3616985.06,	3.92,	3.92,	0.00)	DC	
	4TH HIGHEST VALUE IS	11.30223 AT (	487750.96,	3616985.06,	4.81,	4.81,	0.00)	DC	
	5TH HIGHEST VALUE IS	4.70076 AT (	487561.08,	3617473.32,	14.70,	14.70,	0.00)	DC	
	6TH HIGHEST VALUE IS	3.84122 AT (	487618.34,	3617476.33,	14.32,	14.32,	0.00)	DC	
	7TH HIGHEST VALUE IS	2.40295 AT (	487386.27,	3617476.33,	14.33,	14.33,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.10129 AT (	489893.87,	3613947.00,	12.67,	12.67,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.09052 AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.09021 AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
SITE1_05	1ST HIGHEST VALUE IS	100.15812 AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
	2ND HIGHEST VALUE IS	44.21290 AT (	487630.40,	3617168.91,	7.06,	7.06,	0.00)	DC	
	3RD HIGHEST VALUE IS	9.94317 AT (	487681.64,	3616985.06,	3.92,	3.92,	0.00)	DC	
	4TH HIGHEST VALUE IS	8.35022 AT (	487750.96,	3616985.06,	4.81,	4.81,	0.00)	DC	
	5TH HIGHEST VALUE IS	7.76391 AT (	487561.08,	3617473.32,	14.70,	14.70,	0.00)	DC	
	6TH HIGHEST VALUE IS	5.86044 AT (	487618.34,	3617476.33,	14.32,	14.32,	0.00)	DC	
	7TH HIGHEST VALUE IS	3.90867 AT (	487386.27,	3617476.33,	14.33,	14.33,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.09288 AT (	489893.87,	3613947.00,	12.67,	12.67,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.08849 AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.08557 AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	
SITE1_06	1ST HIGHEST VALUE IS	35.49698 AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
	2ND HIGHEST VALUE IS	27.34645 AT (	487630.40,	3617168.91,	7.06,	7.06,	0.00)	DC	
	3RD HIGHEST VALUE IS	13.49437 AT (	487561.08,	3617473.32,	14.70,	14.70,	0.00)	DC	
	4TH HIGHEST VALUE IS	9.80026 AT (	487618.34,	3617476.33,	14.32,	14.32,	0.00)	DC	
	5TH HIGHEST VALUE IS	6.98399 AT (	487681.64,	3616985.06,	3.92,	3.92,	0.00)	DC	
	6TH HIGHEST VALUE IS	6.11512 AT (	487386.27,	3617476.33,	14.33,	14.33,	0.00)	DC	
	7TH HIGHEST VALUE IS	5.88726 AT (	487750.96,	3616985.06,	4.81,	4.81,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.08966 AT (	489893.87,	3613947.00,	12.67,	12.67,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.08728 AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.08133 AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE SUMMARY OF MAXIMUM PERIOD (6144 HRS) RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC		RECEPTOR (XR,	YR,	ZELEV,	ZHILL,	ZFLAG)	OF TYPE	NETWORK GRID-ID
SITE5_01	1ST HIGHEST VALUE IS	0.95279	AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
	2ND HIGHEST VALUE IS	0.61380	AT (	489893.87,	3613947.00,	12.67,	12.67,	0.00)	DC	
	3RD HIGHEST VALUE IS	0.54382	AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.04929	AT (	487750.96,	3616985.06,	4.81,	4.81,	0.00)	DC	
	5TH HIGHEST VALUE IS	0.04924	AT (	487681.64,	3616985.06,	3.92,	3.92,	0.00)	DC	
	6TH HIGHEST VALUE IS	0.04232	AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.04216	AT (	487630.40,	3617168.91,	7.06,	7.06,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.03574	AT (	487618.34,	3617476.33,	14.32,	14.32,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.03487	AT (	487561.08,	3617473.32,	14.70,	14.70,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.03363	AT (	487386.27,	3617476.33,	14.33,	14.33,	0.00)	DC	
SITE5_02	1ST HIGHEST VALUE IS	1.81899	AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
	2ND HIGHEST VALUE IS	0.94817	AT (	489893.87,	3613947.00,	12.67,	12.67,	0.00)	DC	
	3RD HIGHEST VALUE IS	0.88368	AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.05047	AT (	487750.96,	3616985.06,	4.81,	4.81,	0.00)	DC	
	5TH HIGHEST VALUE IS	0.05011	AT (	487681.64,	3616985.06,	3.92,	3.92,	0.00)	DC	
	6TH HIGHEST VALUE IS	0.04591	AT (	487630.40,	3617168.91,	7.06,	7.06,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.04565	AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.03519	AT (	487618.34,	3617476.33,	14.32,	14.32,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.03518	AT (	487561.08,	3617473.32,	14.70,	14.70,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.03270	AT (	487386.27,	3617476.33,	14.33,	14.33,	0.00)	DC	
SITE5_03	1ST HIGHEST VALUE IS	4.66793	AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
	2ND HIGHEST VALUE IS	1.62271	AT (	489893.87,	3613947.00,	12.67,	12.67,	0.00)	DC	
	3RD HIGHEST VALUE IS	1.51651	AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.04999	AT (	487750.96,	3616985.06,	4.81,	4.81,	0.00)	DC	
	5TH HIGHEST VALUE IS	0.04927	AT (	487681.64,	3616985.06,	3.92,	3.92,	0.00)	DC	
	6TH HIGHEST VALUE IS	0.04533	AT (	487630.40,	3617168.91,	7.06,	7.06,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.04490	AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.03517	AT (	487618.34,	3617476.33,	14.32,	14.32,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.03393	AT (	487561.08,	3617473.32,	14.70,	14.70,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.03316	AT (	487386.27,	3617476.33,	14.33,	14.33,	0.00)	DC	

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE SUMMARY OF MAXIMUM PERIOD (6144 HRS) RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	NETWORK GRID-ID
SITE5_04	1ST HIGHEST VALUE IS	21.73974 AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
	2ND HIGHEST VALUE IS	3.30801 AT (	489893.87,	3613947.00,	12.67,	12.67,	0.00)	DC	
	3RD HIGHEST VALUE IS	3.15633 AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.04876 AT (	487750.96,	3616985.06,	4.81,	4.81,	0.00)	DC	
	5TH HIGHEST VALUE IS	0.04749 AT (	487681.64,	3616985.06,	3.92,	3.92,	0.00)	DC	
	6TH HIGHEST VALUE IS	0.04422 AT (	487630.40,	3617168.91,	7.06,	7.06,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.04347 AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.03559 AT (	487618.34,	3617476.33,	14.32,	14.32,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.03522 AT (	487561.08,	3617473.32,	14.70,	14.70,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.03495 AT (	487386.27,	3617476.33,	14.33,	14.33,	0.00)	DC	
SITE5_05	1ST HIGHEST VALUE IS	0.53628 AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
	2ND HIGHEST VALUE IS	0.41808 AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	
	3RD HIGHEST VALUE IS	0.34838 AT (	489893.87,	3613947.00,	12.67,	12.67,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.03641 AT (	487750.96,	3616985.06,	4.81,	4.81,	0.00)	DC	
	5TH HIGHEST VALUE IS	0.03628 AT (	487681.64,	3616985.06,	3.92,	3.92,	0.00)	DC	
	6TH HIGHEST VALUE IS	0.03374 AT (	487630.40,	3617168.91,	7.06,	7.06,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.03366 AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.02795 AT (	487561.08,	3617473.32,	14.70,	14.70,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.02777 AT (	487618.34,	3617476.33,	14.32,	14.32,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.02719 AT (	487386.27,	3617476.33,	14.33,	14.33,	0.00)	DC	
SITE5_06	1ST HIGHEST VALUE IS	0.86348 AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
	2ND HIGHEST VALUE IS	0.64590 AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	
	3RD HIGHEST VALUE IS	0.47804 AT (	489893.87,	3613947.00,	12.67,	12.67,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.03740 AT (	487750.96,	3616985.06,	4.81,	4.81,	0.00)	DC	
	5TH HIGHEST VALUE IS	0.03730 AT (	487681.64,	3616985.06,	3.92,	3.92,	0.00)	DC	
	6TH HIGHEST VALUE IS	0.03464 AT (	487630.40,	3617168.91,	7.06,	7.06,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.03455 AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.02848 AT (	487618.34,	3617476.33,	14.32,	14.32,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.02827 AT (	487561.08,	3617473.32,	14.70,	14.70,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.02806 AT (	487386.27,	3617476.33,	14.33,	14.33,	0.00)	DC	

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE SUMMARY OF MAXIMUM PERIOD (6144 HRS) RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	NETWORK GRID-ID
SITE5_07	1ST HIGHEST VALUE IS	1.60939 AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
	2ND HIGHEST VALUE IS	1.01246 AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	
	3RD HIGHEST VALUE IS	0.82011 AT (	489893.87,	3613947.00,	12.67,	12.67,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.03741 AT (	487750.96,	3616985.06,	4.81,	4.81,	0.00)	DC	
	5TH HIGHEST VALUE IS	0.03698 AT (	487681.64,	3616985.06,	3.92,	3.92,	0.00)	DC	
	6TH HIGHEST VALUE IS	0.03446 AT (	487630.40,	3617168.91,	7.06,	7.06,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.03420 AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.03110 AT (	487618.34,	3617476.33,	14.32,	14.32,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.03089 AT (	487561.08,	3617473.32,	14.70,	14.70,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.03008 AT (	487386.27,	3617476.33,	14.33,	14.33,	0.00)	DC	
SITE5_08	1ST HIGHEST VALUE IS	3.31558 AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
	2ND HIGHEST VALUE IS	1.71952 AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	
	3RD HIGHEST VALUE IS	1.09556 AT (	489893.87,	3613947.00,	12.67,	12.67,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.04088 AT (	487750.96,	3616985.06,	4.81,	4.81,	0.00)	DC	
	5TH HIGHEST VALUE IS	0.04034 AT (	487681.64,	3616985.06,	3.92,	3.92,	0.00)	DC	
	6TH HIGHEST VALUE IS	0.03749 AT (	487630.40,	3617168.91,	7.06,	7.06,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.03717 AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.03368 AT (	487618.34,	3617476.33,	14.32,	14.32,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.03342 AT (	487561.08,	3617473.32,	14.70,	14.70,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.03249 AT (	487386.27,	3617476.33,	14.33,	14.33,	0.00)	DC	
SITE5_09	1ST HIGHEST VALUE IS	10.05703 AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
	2ND HIGHEST VALUE IS	2.78671 AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	
	3RD HIGHEST VALUE IS	1.94912 AT (	489893.87,	3613947.00,	12.67,	12.67,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.04495 AT (	487750.96,	3616985.06,	4.81,	4.81,	0.00)	DC	
	5TH HIGHEST VALUE IS	0.04415 AT (	487681.64,	3616985.06,	3.92,	3.92,	0.00)	DC	
	6TH HIGHEST VALUE IS	0.04100 AT (	487630.40,	3617168.91,	7.06,	7.06,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.04052 AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.03436 AT (	487618.34,	3617476.33,	14.32,	14.32,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.03363 AT (	487561.08,	3617473.32,	14.70,	14.70,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.03335 AT (	487386.27,	3617476.33,	14.33,	14.33,	0.00)	DC	

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE SUMMARY OF MAXIMUM PERIOD (6144 HRS) RESULTS ***

** CONC OF OTHER   IN MICROGRAMS/M**3   **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	NETWORK GRID-ID
SITE5_10	1ST HIGHEST VALUE IS	84.04176 AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
	2ND HIGHEST VALUE IS	8.65076 AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	
	3RD HIGHEST VALUE IS	7.40250 AT (	489893.87,	3613947.00,	12.67,	12.67,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.04633 AT (	487750.96,	3616985.06,	4.81,	4.81,	0.00)	DC	
	5TH HIGHEST VALUE IS	0.04442 AT (	487681.64,	3616985.06,	3.92,	3.92,	0.00)	DC	
	6TH HIGHEST VALUE IS	0.04206 AT (	487630.40,	3617168.91,	7.06,	7.06,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.04091 AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.03903 AT (	487618.34,	3617476.33,	14.32,	14.32,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.03835 AT (	487561.08,	3617473.32,	14.70,	14.70,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.03535 AT (	487386.27,	3617476.33,	14.33,	14.33,	0.00)	DC	
SITE5_11	1ST HIGHEST VALUE IS	34.66307 AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	
	2ND HIGHEST VALUE IS	21.63489 AT (	489893.87,	3613947.00,	12.67,	12.67,	0.00)	DC	
	3RD HIGHEST VALUE IS	9.78348 AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
	4TH HIGHEST VALUE IS	0.04273 AT (	487750.96,	3616985.06,	4.81,	4.81,	0.00)	DC	
	5TH HIGHEST VALUE IS	0.04080 AT (	487681.64,	3616985.06,	3.92,	3.92,	0.00)	DC	
	6TH HIGHEST VALUE IS	0.03891 AT (	487630.40,	3617168.91,	7.06,	7.06,	0.00)	DC	
	7TH HIGHEST VALUE IS	0.03772 AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.03740 AT (	487618.34,	3617476.33,	14.32,	14.32,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.03633 AT (	487561.08,	3617473.32,	14.70,	14.70,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.03278 AT (	487386.27,	3617476.33,	14.33,	14.33,	0.00)	DC	
SITE1_08	1ST HIGHEST VALUE IS	73.80687 AT (	487630.40,	3617168.91,	7.06,	7.06,	0.00)	DC	
	2ND HIGHEST VALUE IS	28.97759 AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
	3RD HIGHEST VALUE IS	26.54744 AT (	487750.96,	3616985.06,	4.81,	4.81,	0.00)	DC	
	4TH HIGHEST VALUE IS	23.72275 AT (	487681.64,	3616985.06,	3.92,	3.92,	0.00)	DC	
	5TH HIGHEST VALUE IS	2.97994 AT (	487618.34,	3617476.33,	14.32,	14.32,	0.00)	DC	
	6TH HIGHEST VALUE IS	2.49713 AT (	487561.08,	3617473.32,	14.70,	14.70,	0.00)	DC	
	7TH HIGHEST VALUE IS	1.38226 AT (	487386.27,	3617476.33,	14.33,	14.33,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.10079 AT (	489893.87,	3613947.00,	12.67,	12.67,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.09791 AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.09151 AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE SUMMARY OF MAXIMUM PERIOD (6144 HRS) RESULTS ***

** CONC OF OTHER   IN MICROGRAMS/M**3   **

GROUP ID		AVERAGE CONC		RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	NETWORK GRID-ID
SITE1_07	1ST HIGHEST VALUE IS	230.33012	AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
	2ND HIGHEST VALUE IS	214.28329	AT (	487630.40,	3617168.91,	7.06,	7.06,	0.00)	DC	
	3RD HIGHEST VALUE IS	24.96802	AT (	487681.64,	3616985.06,	3.92,	3.92,	0.00)	DC	
	4TH HIGHEST VALUE IS	18.19427	AT (	487750.96,	3616985.06,	4.81,	4.81,	0.00)	DC	
	5TH HIGHEST VALUE IS	4.59229	AT (	487618.34,	3617476.33,	14.32,	14.32,	0.00)	DC	
	6TH HIGHEST VALUE IS	3.49514	AT (	487561.08,	3617473.32,	14.70,	14.70,	0.00)	DC	
	7TH HIGHEST VALUE IS	1.87673	AT (	487386.27,	3617476.33,	14.33,	14.33,	0.00)	DC	
	8TH HIGHEST VALUE IS	0.10057	AT (	489893.87,	3613947.00,	12.67,	12.67,	0.00)	DC	
	9TH HIGHEST VALUE IS	0.09355	AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
	10TH HIGHEST VALUE IS	0.09056	AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

**MODELOPTs: RegDFAULT CONC   ELEV

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF OTHER   IN MICROGRAMS/M**3   **

GROUP ID		AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	NETWORK GRID-ID
SITE1_01 HIGH	1ST HIGH VALUE IS	893.29366	ON 89021411: AT (	487681.64,	3616985.06,	3.92,	3.92,	0.00)	DC	
SITE1_02 HIGH	1ST HIGH VALUE IS	1476.80472	ON 89011305: AT (	487681.64,	3616985.06,	3.92,	3.92,	0.00)	DC	
SITE1_03 HIGH	1ST HIGH VALUE IS	1127.12694	ON 89031105: AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
SITE1_04 HIGH	1ST HIGH VALUE IS	3837.31858	ON 89011309: AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
SITE1_05 HIGH	1ST HIGH VALUE IS	3215.14578	ON 89011704: AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
SITE1_06 HIGH	1ST HIGH VALUE IS	1629.06899	ON 89021607: AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	
SITE5_01 HIGH	1ST HIGH VALUE IS	272.74704	ON 89011305: AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
SITE5_02 HIGH	1ST HIGH VALUE IS	374.85299	ON 89011305: AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
SITE5_03 HIGH	1ST HIGH VALUE IS	453.86299	ON 89031909: AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
SITE5_04 HIGH	1ST HIGH VALUE IS	1362.73973	ON 89012609: AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
SITE5_05 HIGH	1ST HIGH VALUE IS	98.58733	ON 89040409: AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	
SITE5_06 HIGH	1ST HIGH VALUE IS	144.87326	ON 89031105: AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	
SITE5_07 HIGH	1ST HIGH VALUE IS	249.21086	ON 89010104: AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
SITE5_08 HIGH	1ST HIGH VALUE IS	450.07500	ON 89011010: AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
SITE5_09 HIGH	1ST HIGH VALUE IS	985.02458	ON 89031105: AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
SITE5_10 HIGH	1ST HIGH VALUE IS	3264.69332	ON 89010908: AT (	489737.15,	3613699.86,	10.67,	10.67,	0.00)	DC	
SITE5_11 HIGH	1ST HIGH VALUE IS	1577.16153	ON 89030504: AT (	489969.22,	3613736.03,	13.64,	13.64,	0.00)	DC	
SITE1_08 HIGH	1ST HIGH VALUE IS	4496.63117	ON 89022604: AT (	487630.40,	3617168.91,	7.06,	7.06,	0.00)	DC	
SITE1_07 HIGH	1ST HIGH VALUE IS	8562.18949	ON 89030603: AT (	487582.18,	3617168.91,	6.81,	6.81,	0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

```
**MODELOPTs:  RegDFAULT CONC                                                  ELEV


*** Message Summary : AERMOD Model Execution ***

 --------- Summary of Total Messages --------

A Total of            0 Fatal Error Message(s)
A Total of            0 Warning Message(s)
A Total of         2931 Informational Message(s)

A Total of         6144 Hours Were Processed

A Total of          214 Calm Hours Identified

A Total of         2717 Missing Hours Identified ( 44.22 Percent)

CAUTION!:  Number of Missing Hours Exceeds 10 Percent of Total!
           Data May Not Be Acceptable for Regulatory Applications.
           See Section 5.3.2 of "Meteorological Monitoring Guidance
           for Regulatory Modeling Applications" (EPA-454/R-99-005).


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES   ********
              ***  NONE  ***


   ************************************
   *** AERMOD Finishes Successfully ***
   ************************************
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APPENDIX H

ENVIRONMENTAL JUSTICE REPORT

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ENVIRONMENTAL JUSTICE ANALYSIS

SHIPYARD SEDIMENT REMEDIATION PROJECT

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN DIEGO REGION

Prepared for:

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LSA Project No. SWB1001A

May 2011

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1.0 EXECUTIVE SUMMARY

California law defines Environmental Justice as "the fair treatment of people of all races, cultures and income with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies" (Government Code Section 65040.12 and Public Resources Code [PRC] Section 72000).

Analysis of the available socioeconomic data indicates there is a high percentage of low-income and minority population in the project study area; therefore, there is a potential for the proposed project to disproportionately impact these populations. The location of the proposed project is fixed, as it is the sediment removal of a specific location within the San Diego Bay. The haul route options are linked to the location of the sediment removal and the sediment dewatering and treatment staging area options. Five possible staging areas are considered in the Program Environmental Impact Report (PEIR), and all are located in areas with a higher percentage of low-income and minority population than the City of San Diego, National City, and County of San Diego. The proposed project impacts related to health risk (toxic air contaminants) and noise are less than significant. The proposed project impacts related to water quality, hazardous materials, and marine biology are less than significant with mitigation incorporated. The proposed project impacts related to traffic are reduced to less than significant with implementation of an alternative haul route. There are residences along a portion of the proposed project haul route; however, there are no residences immediately adjacent to the mitigation haul route.

The proposed project impacts related to air quality are significant and unavoidable for the proposed project and for the project alternatives. In sum, the proposed project with suggested mitigation incorporated would not result in a disproportionate impact to low-income and minority populations. This analysis satisfies State Water Resources Control Board (State Water Board) obligations to consider environmental justice principals pursuant to Government Code section 65040.12.

2.0 INTRODUCTION

Title VI of the federal Civil Rights Act of 1964 requires that no person, because of race, color, religion, national origin, sex, age, or handicap, be excluded from participation in, be denied benefits of, or be subjected to discrimination by any federal aid activity. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, issued in February 1994, requires that disproportionately high and adverse health or environmental impacts to minority and low-income populations be avoided or minimized to the extent feasible.

California law defines Environmental Justice as "the fair treatment of people of all races, cultures and income with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies" (Government Code section 65040.12 and PRC section 72000). The statute requires that California state agencies consider environmental justice in their decision-making process if their actions have an impact on the environment, environmental laws, or policies. The statute also requires that California State Agencies promote enforcement of all health and environmental status within their jurisdiction in a manner that ensures the fair treatment of all Californians, irrespective of race, culture and income. As a whole, California's statutory environmental justice framework demonstrates a public policy in which governmental activities that affect human health or the environment should be conducted in a manner that considers the most vulnerable populations, and ensures that environmental justice principles are adhered to.

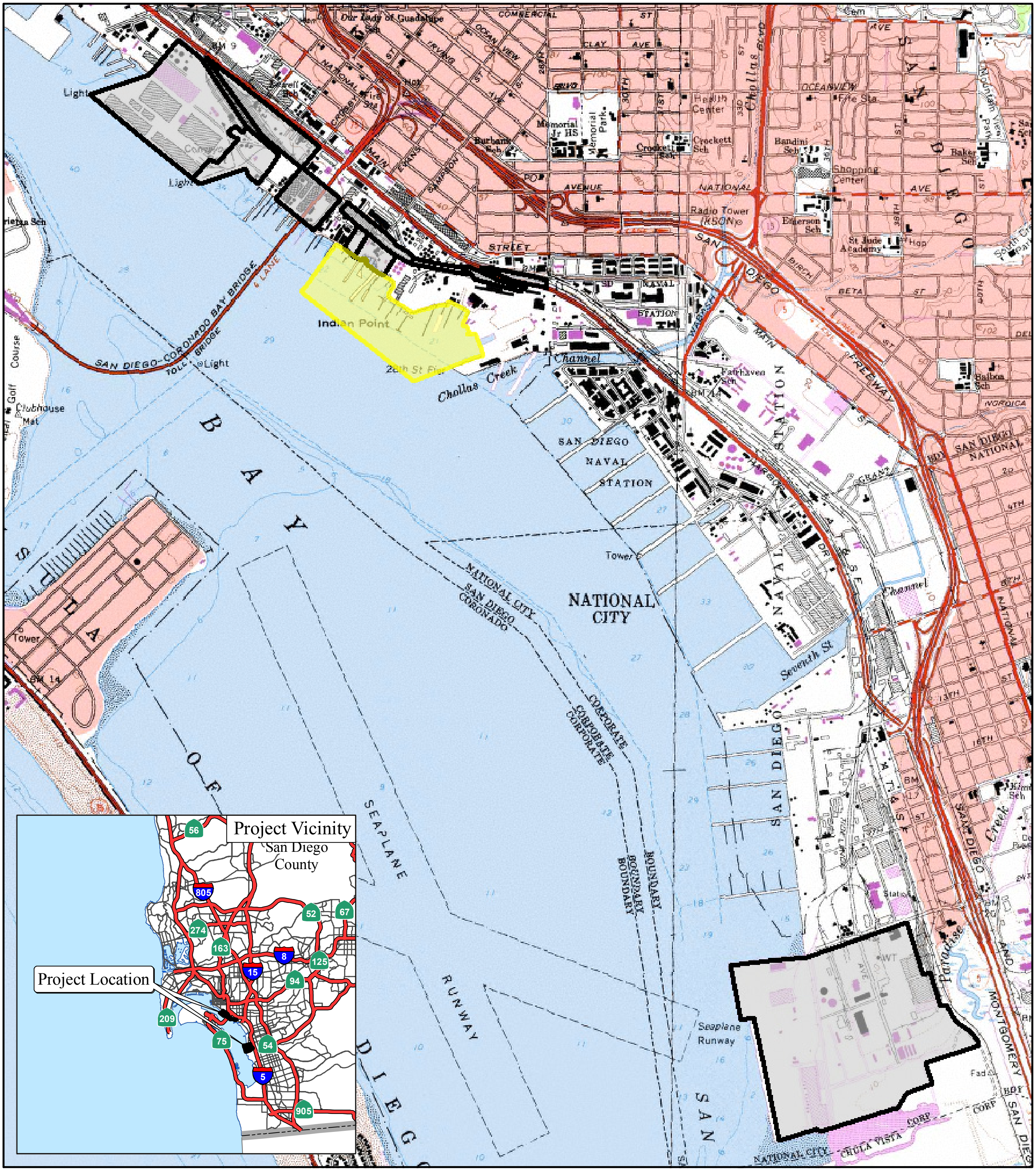
The proposed Shipyard Sediment Remediation Project (proposed project) is the dredging of sediment adjacent to shipyards in the San Diego Bay, including the dewatering and treatment of the dredged material (onshore or on a barge), the potential treatment of decanted water (with anticipated disposal to the sanitary sewer system), and the transport of the removed material to an appropriate landfill for disposal. The purpose of the project is to implement a Tentative Cleanup and Abatement Order (CAO) issued by the California Regional Water Quality Control Board, San Diego Region (hereinafter the San Diego Water Board). The San Diego Water Board is the Lead Agency under the California Environmental Quality Act (CEQA) for the proposed project. The dredging will occur in an area of San Diego Bay defined in the Tentative CAO. The San Diego Water Board is considering the use of one or more staging sites for the dewatering and treatment of the dredge, as further described in this project description. The sediment removal footprint and the optional staging sites comprise the project site for the purpose of the PEIR.

3.0 PROJECT LOCATION AND DESCRIPTION

The study area for the sediment removal project (also referred to as the Shipyard Sediment Site in the Draft Technical Report [DTR] for Tentative CAO No. R9-2011-0001, September 15, 2010) is located along the eastern shore of central San Diego Bay, extending approximately from the Sampson Street Extension on the northwest to Chollas Creek on the southeast, and from the shoreline out to the San Diego Bay main shipping channel to the west. The sediment removal site (also referred to as the Proposed Remedial Footprint in the DTR for the Tentative CAO) comprises approximately 15.2 acres that are subject to dredging and 2.3 acres that are subject to clean sand cover, primarily under piers. The project consists of marine sediments in the bottom bay waters that contain elevated levels of pollutants above San Diego Bay background conditions. This area, combined with the potential upland staging areas described below, are hereinafter collectively referred to as the “project site” (Figure 1, Project Location).

The removal of the marine sediments will require upland areas for dewatering, treatment, and stockpiling of the materials and potential treatment of decanted waters prior to off-site disposal. Therefore, in addition to the open waters of the Shipyard Sediment Site, five upland areas have been identified by the San Diego Water Board as potential sediment staging areas. Each of the potential staging areas has potential usable areas based on review of aerial photographs:

- **Staging Area 1:** 10th Avenue Marine Terminal and Adjacent Parking (approximately 49.66 potentially usable acres)
- **Staging Area 2:** Commercial Berthing Pier and Parking Lots Adjacent to Coronado Bridge (approximately 11.66 potentially usable acres)
- **Staging Area 3:** San Diego Gas and Electric Company (SDG&E) Leasehold/BAE Systems Leasehold/BAE Systems and National Steel and Shipbuilding Company (NASSCO) Parking Lots (approximately 7.27 potentially usable acres)
- **Staging Area 4:** NASSCO/NASSCO Parking and Parking Lot North of Harbor Drive (approximately 3.85 potentially usable acres). Staging Area 4 is not located adjacent to the waterfront; therefore, sediment transport from the barge to the staging area would be required.
- **Staging Area 5:** 24th Street Marine Terminal and Adjacent Parking Lots (approximately 145.31 potentially usable acres)



L S A

FIGURE 1

LEGEND

Shipyard Sediment Project Site

Potential Sediment Staging Areas

N

0 1250 2500

FEET

SOURCE: USGS 7.5' Quad - National City (1975), Point Loma (1994). CA

Shipyard Sediment Remediation Project

Project Location

R:\SWB1001\GIS\Figure1.mxd (5/5/2011)

The Tentative CAO notes that the specific actions to be taken by the responsible parties for the cleanup will be described in a Remedial Action Plan (RAP) that is to be prepared and submitted to the San Diego Water Board.

3.1 PROJECT SETTING AND SITE DESCRIPTION

The project site is located under the planning jurisdiction of the San Diego Unified Port District (Port District) and is identified as District 4 in the certified Port Master Plan. The Port District is a special government entity, created in 1962 by the San Diego Unified Port District Act, California Harbors and Navigation Code, in order to manage San Diego Harbor and administer certain public lands along San Diego Bay. The Port District holds and manages natural resources as trust property on behalf of the People of the State of California, including the land occupied by NASSCO and BAE Systems. The Port Master Plan water use designation within the limits of the proposed project is Industrial–Specialized Berthing.

San Diego Bay is designated as a State Estuary under Section 1, Division 18 (commencing with section 28000) of the PRC. The San Diego Bay shoreline between Sampson Street and 28th Street is listed on the Clean Water Act (CWA) section 303(d) List of Water Quality Limited Segments for elevated levels of copper, mercury, zinc, polynuclear aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs) in the marine sediment. These pollutants are impairing the aquatic life, aquatic-dependent wildlife, and human health beneficial uses designated for San Diego Bay. The northeast boundary of the Shipyard Sediment Site occupies this shoreline.

The principal structural components within the Shipyard Sediment Site include the concrete bulkheads, piers, and dry dock facilities associated with the two shipyard facilities. Bathymetry at the site varies substantially due to the presence of shipways, dry docks, and berths, and ranges from -2 mean lower low water (MLLW) along the bulkheads to -70 feet MLLW at the BAE Systems dry dock sump area.

The marine habitat within the sediment removal area contains both vegetated and unvegetated subtidal soft bottom habitats, pier pilings, and bulkhead walls. The vegetated habitat species include sparse beds of eelgrass (*Zostera marina*). The entire extent of the sediment removal area shoreline is artificially stabilized, generally consisting of a vertical sheet pile bulkhead and a seawall. The marine habitat types include vertical bulkhead walls and dock structures, vegetated and nonvegetated soft-bottom subtidal habitats, and open water. These habitats support marine plants, invertebrates, and fish.

The five potential staging areas consist primarily of leasehold lands and associated parking areas in the immediate vicinity of the Shipyard Sediment Site. The actual usable areas within each potential staging area are comprised of open, paved portions that could be used for the dewatering, treatment, and drying of the dredged marine sediments. Staging Areas 1 through 4 are located within the City of San Diego and are designated in the City's General Plan as

Mixed Use and Industrial Employment. Staging Area 5 is located approximately 3.5 miles from the shipyards, within the City of National City. It is currently designated in the City's General Plan as Industrial–Tidelands Manufacturing, and is under the jurisdiction of the Port District. National City is currently updating their General Plan; the proposed land use designation for Staging Area 5 in the updated General Plan is "San Diego Unified Port District," indicating that land uses are governed by the San Diego Port Master Plan. The currently adopted (1996) combined General Plan/zoning map identifies an overlay zone in Staging Area 5 as subject to the "Unified Port District" overlay zone, also indicating that land uses are governed by the San Diego Port Master Plan.

3.2 PROJECT BACKGROUND

The San Diego Water Board stipulates that several agencies and/or parties caused or permitted the discharge of waste to the Shipyard Sediment Site, which resulted in the accumulation of waste in the marine sediment. The contaminated marine sediment has caused conditions of contamination or nuisance in San Diego Bay that adversely affect aquatic life, aquatic-dependent wildlife, human health, and San Diego Bay beneficial uses. The San Diego Water Board determined that issuance of a CAO was the appropriate regulatory tool to use for correcting the impairment at the Shipyard Sediment Site.

CAOs are issued under the authority of the California Water Code (section 13304). As defined in the State Water Board's Water Quality Enforcement Policy (adopted November 17, 2009):

> *CAOs may be issued to any person who has discharged or discharges waste into state waters in violation of any waste discharge requirement or other order or prohibition issued by a Regional Water Board or the State Water Board, or who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance (discharger). The CAO requires the discharger to clean up the waste or abate the effects of the waste, or both, or, in the case of threatened pollution or nuisance, take other necessary remedial action, including, but not limited to, overseeing cleanup and abatement efforts.*

A CAO requires dischargers to clean up the pollution to background levels or the best water quality that is reasonable. At a minimum, cleanup levels must fully support beneficial uses, unless the Regional Water Board allows a containment zone. The Tentative CAO determined that cleaning up to a background sediment quality level at the Shipyard Sediment Site is economically infeasible. Therefore, the Tentative CAO established alternative cleanup levels for the project that are the lowest technologically and economically achievable levels, as required under CCR Title 23 section 2550.4(e). These alternative levels are described in Section 3.6, Project Characteristics.

This PEIR addresses the cleanup project as identified in the Tentative CAO No. R9-2011-0001, dated September 15, 2010.

3.3 PROJECT GOALS AND OBJECTIVES

The primary goal of the project is to improve water quality in San Diego Bay, consistent with the provisions of the Tentative CAO. The specific project objectives are:

- Protect the quality of the waters of San Diego Bay for use and enjoyment by the people of the state by executing a shipyard sediment cleanup project consistent with the provisions of Tentative CAO No. R9-2011-0001.
- Attain cleanup levels as included in the Tentative CAO No. R9-2011-0001 (judged to be technologically and economically feasible as defined in section 2550.4 of CCR Title 23, pursuant to Resolution No. 92-49).
- Remediate areas identified in Attachment 2 of Tentative CAO No. R9-2011-0001.
- Minimize adverse effects to aquatic life beneficial uses, including Estuarine Habitat (EST), Marine Habitat (MAR), and Migration of Aquatic Organisms (MIGR).
- Minimize adverse effects to aquatic-dependent wildlife beneficial uses, including Wildlife Habitat (WILD), Preservation of Biological Habitats of Special Significance (BIOL), and Rare, Threatened, or Endangered Species (RARE).
- Minimize adverse effects to human health beneficial uses, including Contact Water Recreation (REC-1), Non-contact Water Recreation (REC-2), Shellfish Harvesting (SHELL), and Commercial and Sport Fishing (COMM).
- Implement a cleanup plan that will have long-term effectiveness.
- Minimize adverse effects to the natural and built environment.
- Avoid or minimize adverse impacts to residential areas.
- Result in no long-term loss of use of shipyard and other San Diego Bay-dependent facilities.
- Minimize short-term loss of use of shipyard and other San Diego Bay-dependent facilities.

3.4 PROJECT CHARACTERISTICS

The project addressed in this PEIR is the implementation of Tentative CAO No. R9-2011-0001, which requires that remedial actions be implemented within the Shipyard Sediment

Site. Remedial actions may include dredging, application of clean sand cover, and/or natural recovery depending upon a number of factors, including levels of contamination in the sediment and site accessibility. The Tentative CAO determined that dredging and disposal of sediments is the proposed remedy for approximately 15.2 acres of the site and is expected to generate approximately 143,400 cubic yards (cy) of contaminated marine sediment. In addition to the 15.2 acres targeted for dredging, approximately 2.3 acres of the project site are inaccessible or under-pier areas that will be remediated by one or more methods other than dredging, most likely by application of clean sand cover. The remedial action would be followed by a period of post-remedial monitoring. Some variation in the schedule may occur depending upon selected equipment size and numbers, the distance to the process area and the potential ship traffic.

The project includes the dredging of and/or applying a clean sand cover to the contaminated soils; vessel transport to shore; dewatering, stockpiling, and testing of dredged materials at a landside staging location; and truck transport of dredge materials to the appropriate landfill disposal facility. Each of these components is further described below.

There are two scheduling options for completion of the remedial action. The first scheduling option is expected to take 2 to 2.5 years to complete. Under this option, the dredging operations would occur for 7 months of the year and would cease from April through August during the endangered California least tern breeding season.

The second option is to implement the remedial plan with continuous dredging operations, which would be expected to take approximately 12.5 months to complete. This scenario assumes that the dewatering, solidification, and stockpiling of the materials would occur simultaneously and continuously with the dredging. Also assumed under this compressed schedule option is that dredging operations could proceed year-round, including during the breeding season of the endangered California least tern (April through August).

Actual scheduling and staging of the dredge activity will reflect the contractual obligations of the shipyards at the time the dredge activity is to occur. It is anticipated that the shipyards will be able to schedule most of the contract work around the remediation efforts with few exceptions. The San Diego Water Board anticipates there may be as much as a 5- or 6-week (or approximately a 10 percent) delay or extension of the schedule to accommodate unplanned but necessary ship movements. The preferred schedule will be determined during the final design phase. However, both schedule options are included in the analysis for the technical studies and PEIR. Both scheduling options would be followed by a period of postremedial monitoring as required by the Tentative CAO.

3.4.1 Dredging and Clean Sand Cover Operations

The project involves environmental dredging which, unlike navigational or construction dredging, is performed specifically for the removal of contaminated sediment while minimizing the spread of contaminants to the surrounding environment during dredging operations. The proposed project includes the dredging and removal of approximately 143,400 cy of contaminated sediment from the Shipyard Sediment Site. The cubic yard amount was identified in the Tentative CAO and includes a 1-foot over-dredge assumption.

Silt curtains and or air curtains will be placed around the dredge area, including the dredge barges. The silt curtain will consist of a geotextile fabric curtain with a floatation boom at the upper hem and ballast weights at the lower hem. The silt curtain will act as a physical barrier that will limit access to the portions of the site where the dredging operations are occurring. The silt curtain will also prevent resuspended particles from migrating outside of the active dredging area. A double floating silt curtain will be used: an outer silt curtain surrounding the remediation site, and a silt curtain around the active dredging unit.

The floating silt curtain will be comprised of connected lengths of geotextile fabric to help to control and contain migration of (contaminated) suspended sediments at the water surface and at depth. A continuous length of floating silt curtain will be arranged to fully enclose the dredging equipment and the scow barge being loaded with sediment. The silt curtain will be supported by a floating boom in open water areas. Along pier edges, the dredge contractor will have the option of connecting the silt curtain directly to the structure. In either case, the contractor is required to continuously monitor the silt curtain for damage, dislocation, or gaps, and immediately fix any locations where it is no longer continuous or where it has loosened from its supports.

The bottom of the silt curtain surrounding the dredging unit shall be weighted with ballast weights or rods affixed to the base of the fabric. These weights are intended to resist the natural buoyancy of the geotextile fabric and lessen its tendency to move in response to currents. The floating silt curtain around the dredging unit will be deployed in a manner that includes a gap above the seafloor to allow for the tidal ranges and fluctuations, and to sufficiently allow for dredge operation. The outer silt curtain surrounding the remediation site shall be deployed in a manner dependent on site-specific conditions including, but not limited to, depth, current velocities, existing infrastructure for curtain deployment, and proximity of sensitive habitat (i.e., essential fish habitat).[1]

Where feasible and applicable, curtains will be anchored and deployed from the surface of the water to just above the substrate. If necessary, silt curtains with tidal flaps will be installed to facilitate curtain deployment in areas of higher flow. Additional curtains may be required by resource agencies to isolate environmentally sensitive areas like essential fish habitat and eel grass.

---

[1] United States Army Corps of Engineers: Engineer Research and Development Center. 2008. Technical Guidelines for Environmental Dredging of Contaminated Sediments. ERDC/EL TR-08-29.

Air curtains may be used in conjunction with silt curtains to contain resuspended sediment, to enhance worker safety, and allow barges to transit into and out of the work area without the need to open and close silt curtain gates. Air curtains are formed by laying a perforated pipe along the mudline and pumping air continuously through the piping. The upwelling of the tiny bubbles to the surface of the water has the effect of preventing fine-grained sediments from passing across the line of the pipe.

It is anticipated that the dredging would utilize a derrick barge equipped with a closed environmental bucket such as the Cable Arm Environmental Clamshell® in order to maintain water quality. The dredge material will be placed on material barges and transported with the help of tugboats to a landside staging area. All barges will be outfitted with a water recovery system to collect the water deposited on the barges during dredging operations; the objective is to ensure that no water collected during the operations re-enters the San Diego Bay.

Due to the presence of infrastructure, such as piers and pilings, dredging is constrained in several locations within the project site. Therefore, contaminated areas under piers and pilings will be remedied through subaqueous, or in situ, clean sand cover. In situ clean sand cover is the placement of clean material on top of the contaminated sediment. The material is typically clean sand, silty to gravelly sand, and/or armoring material. Effective application of the clean sand cover requires sufficient thickness, careful placement to avoid disturbance, and maintenance to ensure integrity from future disturbances. Application of the clean sand cover would involve the transport of material to the site (possibly via truck or barge) and placement of the materials over contaminated sediment. The application of the cover will require a materials barge outfitted with a stone slinger truck, hoppers, and conveyors to move and place the clean sand cover materials over the contaminated marine sediments.

3.4.2 Onshore Dewatering and Treatment

The proposed project requires a landside sediment management site with sufficient space and access to stockpile, dewater, and transport the removed dredge material. Although the exact area required for sediment management will be determined during the final design phase, it is estimated that 2 to 2.5 acres would be required. Five potential staging areas have been identified and will be discussed throughout this PEIR.

The staging area will require site preparation and construction of a pad. The site will be graded and compacted (if necessary), and a sealing liner will be put in place if necessary to prevent infiltration. An asphalt pad will then be constructed. The drying area will be surrounded by K-rails and sealed with foam and impervious fabric to form a confined area.

The dredged sediment, depending upon physical characteristics, will either be off-loaded from the materials barge by an excavator and put into dump trucks for placement in the staging area or treated with a cement-based reagent (pozzolanics) in the barge, then off-loaded into trucks for placement in the staging area for curing and sampling. In either event, the sediment will then be mixed with pozzolanics to accelerate the drying and to bind the sediment. The sediment will be spread out and rotated frequently to further accelerate the drying process. The drains located in the drying area will be isolated from the rest of the storm water system at the site. It is anticipated that the decanted water will be disposed of to the sanitary sewer system. If the excess water from the drying area does not meet industrial wastewater permit requirements and cannot be discharged into the City of San Diego sewage system, the water will be dealt with as contaminated waste and removed from the site by a licensed waste hauler. All collected water will be tested and disposed of in accordance with local, state, and federal requirements. After drying, soil sampling will be conducted, and all dredged material will be loaded directly onto trucks for disposal at an approved upland landfill.

3.4.3 Transportation and Disposal

Once the dredge materials have been dried and tested, they will be loaded onto trucks for disposal at an approved landfill. For purposes of this project, it is assumed that 85 percent of the material will be transported from the staging area to Otay Landfill, approximately 15 miles southeast of the Shipyard Sediment Site. Although the sediment is not known to be classified as California hazardous material, it will be tested upon removal and prior to disposal. It is assumed for the purposes of this PEIR that up to 15 percent of the material will require transport to a hazardous waste facility (a Class I facility), most likely the Kettleman Hills Landfill in Kings County, California, near Bakersfield.

The number of truck trips necessary to remove the treated dredge material is based on several factors. The average truck weight during a recent dredging project at BAE Systems was 21 tons per truck. The industry standard metric is 1.6 tons per cubic yard of sediment. Geosyntec Inc. estimates that 50 truck trips per day is the feasible maximum number of trucks that can operate at the treatment site. The entreated dredge quantity is 143,400 cy. As a result of the increase in bulk that would occur after treatment with binding agents, the total treated dredge quantity to be transported off site is approximately 164,910 cy. With 21 tons (or 13.1 cy) of material per truck, and 50 truck trips per day, the total duration of the dredge-and-haul activity is approximately 50 weeks. The duration of the dredge-and-haul activity is assumed to include several weeks of equipment setup and staging area preparation; therefore, a 54-week or 12.5-month schedule is anticipated.

Trucks departing from potential Staging Areas 1 through 4 would access Interstate 5 (I-5) south via East Harbor Drive and 28th Street. Trucks departing from Staging Area 5 would access I-5 south either directly from Bay Marina Drive or from West 32nd Street to Marina Way to Bay Marina Drive. The most direct route to Otay Landfill is via I-5 south to State Route 54 (SR-54) east, to Interstate 805 (I-805) south (Figure 2).

L S A

FIGURE 2

LEGEND

- Census Tracts
- Census Block Groups
- Potential Sediment Staging Areas
- Shipyard Sediment Project Site
- Proposed Haul Routes

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SOURCE: Bing Maps (2008), U.S. Census Bureau (2000)

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Shipyard Sediment Remediation Project

Study Area Census Tracts and Haul Routes

3.5 DISCRETIONARY PERMITS, APPROVALS, OR ACTIONS REQUIRED

In accordance with sections 15050 and 15367 of the State CEQA Guidelines, the San Diego Water Board is the designated Lead Agency for the project and has principal authority and jurisdiction for CEQA actions. The San Diego Water Board will consider certification of the PEIR in support of Final CAO approval.

Responsible Agencies are those agencies that have jurisdiction or authority over one or more aspects associated with the development of a proposed project. Trustee Agencies are state agencies that have jurisdiction by law over natural resources affected by a proposed project that are held in trust for the people of the state. Project implementation will require approval of a Coastal Development Permit (CDP) by the California Coastal Commission (CCC) (pursuant to the California Coastal Act) and administrative (ministerial) approvals from Responsible and Trustee Agencies, including but not limited to the San Diego Water Board (pursuant to CWA and the California Water Code Porter-Cologne Water Quality Control Act [Porter-Cologne Act]), the United States Army Corps of Engineers (ACOE) (pursuant to section 404 of the CWA and section 10 of the Federal Rivers and Harbors Appropriation Act of 1899), the National Marine Fisheries Service (NMFS) (pursuant to the Federal Magnusson-Stevens Act), the United States Fish and Wildlife Service (U.S. FWS) (pursuant to the Federal Endangered Species Act [FESA]), the Air Pollution Control District (APCD), the United States Coast Guard (USCG), and the California State Lands Commission (CSLC). The Port District has land use authority for the potential staging areas and has delegated jurisdiction from the CCC to issue CDPs. The CSLC has jurisdiction and management authority over all ungranted tidelands and submerged lands and review authority for such lands legislatively granted to local jurisdictions, such as the Port District. See Table A for a list of discretionary and permit approvals required for project implementation.

The CDFG will not have regulatory jurisdiction (i.e., will not require a Lake or Streambed Alteration Agreement), but may comment on the PEIR pursuant to CEQA to address issues with a potential to adversely affect avian and marine species. Additionally, the CDFG will review and comment on ACOE permits pursuant to the Federal Fish and Wildlife Coordination Act.

Table A: Discretionary Permits and Approvals

Discretionary Permits/Approvals	Agency
Final CAO Approval/Remedial Action Plan Approval	San Diego Water Board
PEIR Certification	San Diego Water Board
Project Approval	San Diego Water Board CCC CSLC (consultation)
CWA section 404 Permit and section 10 of the Federal Rivers and Harbors Appropriation Act of 1899 Permit	ACOE USCG (consultation) U.S. FWS (consultation) NMFS (consultation)
CWA Section 401 Certification water quality permits	San Diego Water Board
Report for WDRs for Dredging Permit/Dewatering Permit	San Diego Water Board
Air Pollution Control Permit	APCD
CDP and land use approval for use of potential staging areas located in the Port District	Port District
Authorization for dredging on legislatively granted sovereign lands and remediation activity on ungranted sovereign lands	CSLC

ACOE = United States Army Corps of Engineers
APCD = Air Pollution Control District
CAO = Cleanup and Abatement Order
CCC = California Coastal Commission
CDP = Coastal Development Permit
CSLC = California State Lands Commission
CWA = Clean Water Act
NMFS = National Marine Fisheries Service
PEIR = Program Environmental Impact Report
Port District = San Diego Unified Port District
San Diego Water Board = California Regional Water Quality Control Board, San Diego Region
USCG = United States Coast Guard
U.S. FWS = United States Fish and Wildlife Service
WDRs = Waste Discharge Requirements

4.0 AFFECTED ENVIRONMENT

4.1 LAND USE CHARACTERISTICS

The five potential staging areas consist primarily of leasehold lands and associated parking areas in the immediate vicinity of the Shipyard Sediment Site. The actual usable areas within each potential staging area are comprised of open, paved portions that could be used for the dewatering, treatment, and drying of the dredged marine sediments. Staging Areas 1 through 4 are located within the City of San Diego and are designated in the City's General Plan as Mixed Use and Industrial Employment. Staging Area 5 is located approximately 3.5 miles from the shipyards and within the City of National City. It is currently designated in the City's General Plan as Industrial–Tidelands Manufacturing and is under the jurisdiction of the Port District. National City is currently updating their General Plan; the proposed land use designation for Staging Area 5 in the updated General Plan is "San Diego Unified Port District," indicating that land uses are governed by the San Diego Port Master Plan. The currently adopted (1996) combined General Plan/zoning map identifies an overlay zone in Staging Area 5 as subject to the "Unified Port District" overlay zone, also indicating that land uses are governed by the San Diego Port Master Plan

4.1.1 Staging Areas 1 through 4 – 28th Street Haul Route

Land use designations adjacent to the 28th Street Haul Route, including portions of Harbor Drive, consist of Parking Lots and Transportation, Industrial, Warehouse/Storage, Office, Hotel/Motel, Commercial, Marine Terminal, and smaller areas of multi-family Residential designations. These land use designations are consistent with existing uses. Zoning districts for this route include: Barrio Logan Planned District, Redevelopment Subdistrict, and Subdistrict D; Centre City Planned District (awaiting CCC approval), and IH-2-1.

4.1.2 Staging Area 5 – National City Haul Route

The National City Combined General Plan/Zoning Map designations for this area include combinations of Tidelands Manufacturing, Medium Manufacturing, Planned Development, Coastal Zone, San Diego Unified Port District, Commercial Tourist, and Open Space designations. These designations are consistent with existing land uses.

4.1.3 Harbor Boulevard/Civic Center Drive Haul Route

The Harbor Boulevard/Civic Center Drive Haul Route (Figure 3, Mitigation Haul Route) was identified as an alternative haul route for traffic impact mitigation purposes. Land use designations adjacent to the Civic Center Drive Haul Route, including portions of Harbor Drive consist mainly of Transportation and Military designations. General Plan designations for this route are included in the National City Combined General Plan/Zoning Map and include Military Reservation, a small portion of Light Manufacturing, and Coastal Zone designations. The land uses designations are consistent with existing uses.

For the purpose of this report, non-industrial land uses, which may be considered sensitive with regard to environmental justice, are determined to be residential areas, parks, and recreational areas that occur directly adjacent to haul routes and may be subjected to potential adverse impacts resulting from project activities. Non-industrial land uses are identified in Figures 4a and 4b. Potentially sensitive land uses were identified during a site visit in February 2011 and by using aerial photographs. Non-industrial land uses with potential sensitivity within the City of San Diego include Cesar Chavez Park, located near Staging Area 2; Chicano Park, located at the base of the Coronado Bridge near the potential haul route; and a residential area located along the haul route at Boston Avenue. Existing potentially sensitive (i.e., non-industrial) land uses in National City that are associated with Staging Area 5 include the Paradise Marsh viewing platform and passive recreational area, Pier 32 Marina, Pepper Park, and the Boat Launching Facility. These potentially sensitive land uses are all located adjacent to Staging Area 5 and the associated haul route along Bay Marina Way and Bay Marina Drive.

4.2 SOCIOECONOMIC ENVIRONMENT

The environmental justice analysis was conducted using census tract-level and census block-level information from the 2000 Census for the project study area (Figure 2). The type of census data needed for this level of analysis is currently only available from the 2000 Census. This data for the 2010 Census has not been released in its entirety, and portions are not publicly available; therefore, for consistency in comparing data across census tracts, the 2000 Census data was utilized in this analysis. The following analysis provides a comparison of several measures with which to evaluate environmental justice:

- Percentage of non-White residents
- Percentage of Hispanic residents (the Census Bureau considers Hispanic or Latino ethnicity distinct from racial background)
- Income
- Percentage in poverty by household

L S A

FIGURE 3

LEGEND

Potential Sediment Staging Areas

Shipyard Sediment Project Site

Potential Haul Routes

0 350 700
FEET

SOURCE: NAIP Imagery (2009)

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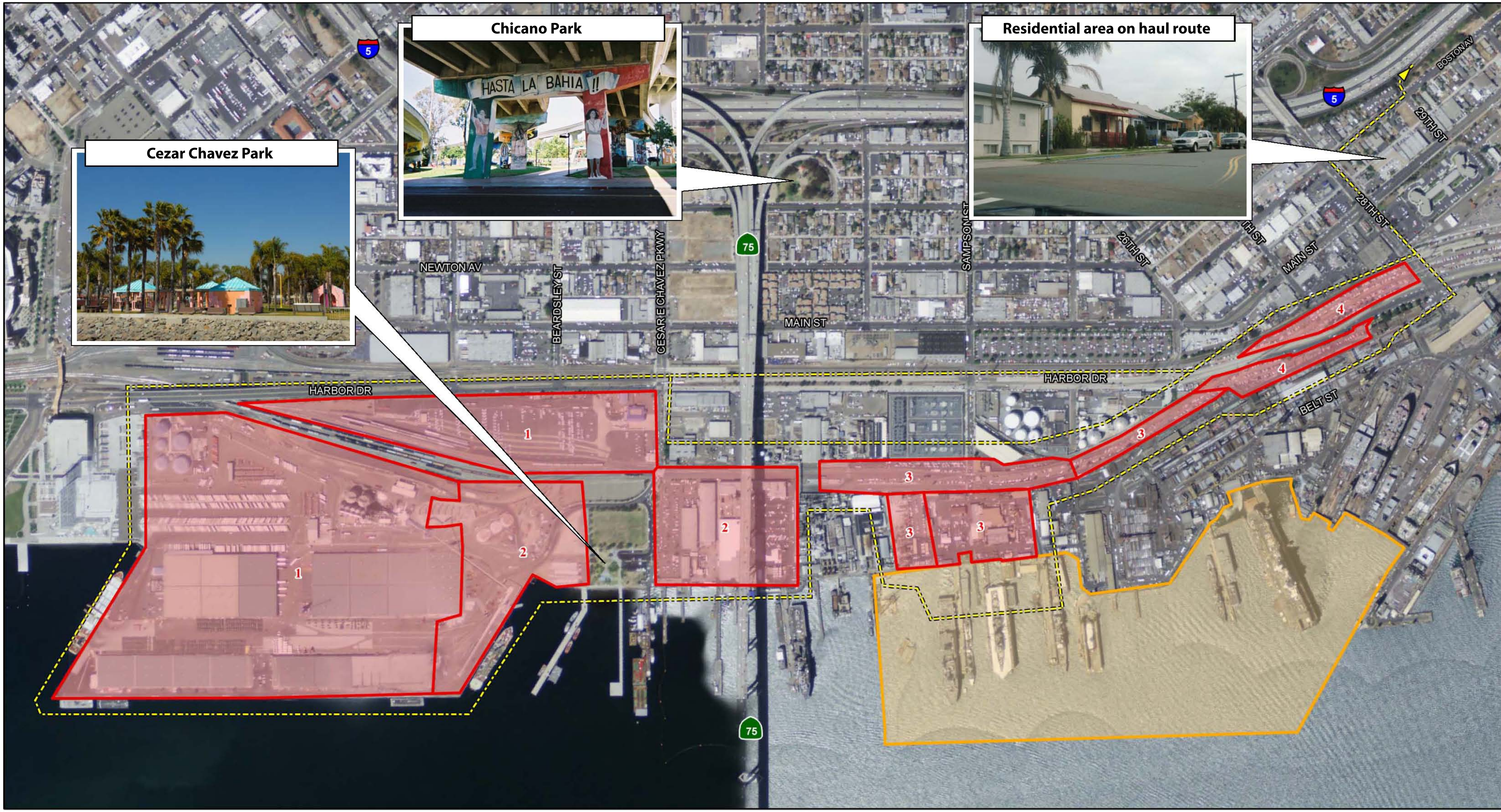
San Diego Sediment Removal Project

Environmental Justice Analysis

Potential Alternate Haul Route



LSA

LEGEND

Potential Sediment Staging Areas

Shipyard Sediment Project Site

Potential Haul Routes

0 300 600
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SOURCE: NAIP Imagery (2009)

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FIGURE 4a

San Diego Sediment Removal Project

Environmental Justice Analysis
Potentially Sensitive Receptors

LSA

FIGURE 4b

LEGEND

- Potential Sediment Staging Areas
- Shipyard Sediment Project Site
- Potential Haul Routes

0 300 600
FEET

SOURCE: NAIP Imagery (2009)

San Diego Bay Sediment Removal Project

Environmental Justice Analysis
Potentially Sensitive Receptors

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- Percentage in poverty by population
- Median household income

The focus of this report is on Census Tracts 38.00, 39.02, 50.00, 51.00, 114.00, and 115.00 (Figure 2). The Census Tracts are further divided into focused census blocks, with the exception of Census Tract 38.00 and Census Tract 115, which are single units and are not further divided by the U.S. Census Bureau.

4.2.1 Population

The population within the census tracts in the project study area are summarized in Table B and range from 7,343 in Census Tract 38.00 to 315 residents in Block 1 of Tract 114.00 (with the exception of a non-residential area of Block 2 in Tract 51.00). As depicted in Figure 2, census tract information associated with the 28th Street Haul Route includes Census Tracts 50.00, 51.00, 38.00, and a small portion of Tract 39.02. The largest total population is within Census Tract 38.00, which has a total population of 7,343. Census Tracts 50.00, 51.00, and 39.02 had populations that totaled 2,529, 3,600, and 5,262, respectively.

Table B: Population

Tract Number	38.00	39.02	50.00				51.00		114.00			115.00
Block Number	1	3	1	2	3	4	2	3	1	2	9	1
Population by Block Number	7,343	1,153	1,657	1,478	974	837	n/a*	1,377	315	2,784	915	259

* Non-residential area

The Staging Area 5/National City Haul Route is situated entirely within Census Tract 115.00, which has a total population of 259.

The Harbor Boulevard/Civic Center Haul Route option is situated within Census Tracts 38.00 and 114.00. As stated previously, Census Tract 38.00 has the largest total population with 7,343 residents. Tract 114.00 has a total population of 4,462.

Based on 2000 Census data, the City of San Diego population is recorded at 1,223,400. The population in National City is 54,260 and the entire County of San Diego population is 2,813,233.

4.2.2 Ethnic Composition

Within the project study area, the Hispanic population varies from 93 percent of the population within Blocks 3 and 4 of Tract 50.00 to 16 percent of the population within Census Tract 38.00. The Non-White population ranges from 67 percent in Block 3 of Tract

50.00 to 38 percent in Census Tract 38.00. As depicted in attached Figure 2, the 28th Street Haul Route, which is associated with Staging Areas 1 through 4, is situated adjacent to several census tracts (and blocks). The 28th Street Haul Route conveys traffic to the east on Harbor Drive, through Census Tracts 51.00, 50.00, 38.00, and a small portion of 39.02. The percentages of Non-White residents in Census Blocks 2 and 3 within Census Tract 51.00 are 44 percent and 47 percent, respectively. Hispanic population percentages in these census blocks are 44 percent and 26 percent, respectively. The percentages of Non-White residents in Census Blocks 1, 2, and 4 within Census Tract 50.00 are 61 percent, 0 percent, and 51 percent, respectively. Hispanic population percentages in these census blocks are 85 percent, 0 percent, and 93 percent, respectively. There is no residential population in Census Block 2 of Census Tract 50.00. The area overlapping Census Block 2 is mainly occupied by parking and shipyard operations. The Non-White population percentage within Census Tract 38.00 (no census block division) is 38 percent with a Hispanic population percentage of 16 percent. The Non-White population percentage within Census Block 3 of Census Tract 39.02 is 59 percent, and the Hispanic population percentage is 85 percent. Characterizing the population characteristics along the possible haul routes is difficult because of the mixed land use pattern represented by relatively small pockets of residential land use. The average of the Non-White population in all census blocks that overlap 28th Street Haul Route is 46 percent and the average Hispanic population for this haul route is 55 percent.

The National City Haul Route associated with Staging Area 5 is situated within Census Tract 115.00, with a population that is 54 percent Non-White and 86 percent Hispanic.

The Harbor Boulevard/Civic Center Mitigation Haul Route (depicted on Figure 4), which is the potential alternate haul route, is situated within Census Tracts 38.00 and 114.00. Census Tract 38.00 is composed of a 38 percent Non-White population and a 16 percent Hispanic population. Census Blocks 1 and 9 within Census Tract 114.00 are composed of a 46 percent Non-White and 87 percent Hispanic population, and a 44 percent Non-White and 19 percent Hispanic population, respectively. The average Non-White population in all census blocks that overlaps the Harbor Boulevard/Civic Center Haul Route is 43 percent, and the average Hispanic population for this area is 41 percent.

The City of San Diego has a 42 percent Non-White population and a 25 percent Hispanic population. National City has a 67 percent Non-White population and a 59 percent Hispanic population. The County of San Diego's Non-White population is 36 percent and its Hispanic population is 27 percent.

Table C depicts the ethnic composition of the census tracts and blocks within the project study area. All potential haul routes are relatively comparable in terms of ethnic composition. Table D summarizes population characteristics for the two possible haul routes for Staging Areas 1 through 4, and Table E summarizes population characteristics for the National City Haul Route. When the population characteristics of the census tracts where the haul routes are located are compared to the applicable City and County averages, the project area census tracts have a higher percentage of Non-White and Hispanic population.

Table C: Population Characteristics

Tract Number	**38.00**	**39.02**	**50.00**				**51.00**		**114.00**			**115.00**
Block Number	1	3	1	2	3	4	2	3	1	2	9	1
Hispanic Population	16%	85%	85%	N/A[1]	93%	93%	44%	26%	87%	84%	19%	86%
Non-White Population	38%	59%	61%	N/A	67%	51%	44%	47%	46%	43%	44%	54%

[1] Non-residential area
N/A = not applicable

Table D: Population Characteristics – Haul Routes for Staging Areas 1 through 4

	28th Street Haul Route	**Mitigation Haul Route**	**City of San Diego Average**	**County of San Diego Average**
Non-White	46%	43%	42%	36%
Hispanic	55%	41%	25%	27%

Table E: Population Characteristics – Haul Route for Staging Area 5

	National City Haul Route	**National City Average**	**County of San Diego Average**
Non-White	54%	67%	36%
Hispanic	86%	59%	27%

4.2.3 Poverty and Income

Table F depicts percentage of residents in poverty by both population and by household as well as median income. The 28th Street Haul Route, the National City Haul Route, and the Harbor Boulevard/Civic Center Haul Route pass through areas that are relatively comparable in terms of poverty levels. Data is not available for Census Tract 38.00. The remaining census tracts range from a high of 58 percent in poverty (by population) within Block 2 of Tract 51.00 to the lowest percentage of poverty by population at 15 percent within Block 1 of Tract 114.00. The median household income within the project study area is $12,868. The highest median household income occurs within Block 1 of Tract 50.00, and the lowest occurs within Block 3 of Tract 51.00.

Table F: Poverty and Income

Tract Number	**38.00**	**39.02**	**50.00**				**51.00**		**114.00**			**115.00**
Block Number	1	3	1	2	3	4	2	3	1	2	9*	
% in Poverty (by Population)	—[1]*	42%	46%	N/A[2]	30%	45%	58%	55%	15%	38%	—	34%
% in Poverty (by Household)	—	34%	34%	N/A	31%	27%	24%	42%	27%	33%	—	35%
Median Household Income	—	$20,335	$24,327	N/A	$23,047	$12,135	$13,917	$9,208	$25,714	$23,000	—	$20,938

[1] Data not available
[2] Non-residential area
N/A = not applicable

The average percentage in poverty by population for the census blocks that overlap the 28th Street Haul Route is 45 percent and the average median household income in this area is $17,162.

The average percentage in poverty by population for the National City Haul Route is 34 percent (35 percent by household) with a median household income of $20,938.

The average percentage in poverty by population for the census blocks that overlap the Harbor Boulevard/Civic Center Haul Route cannot be calculated accurately because data are not available for the Census Tract 38.00 and Census Block 9 of Tract 114.00. The remaining data (for within Census Block 1 of Tract 114.00) depict the lowest poverty levels with 15 percent of the population in poverty and a median household income of $25,714.

By comparison, the City of San Diego average percentage in poverty by population is 15 percent (11 percent by household) with a median household income of $53,060. National City's average percentage in poverty by population is 22 percent (20 percent by household) with a median household income of $31,479. The County of San Diego's average percentage in poverty by population is 15 percent (9 percent by household) with a median household income of $53,438.

Table G summarizes poverty and income characteristics for the two possible haul routes for staging Areas 1 through 4, and Table H summarizes poverty and income characteristics for the National City Haul Route. When the poverty and income characteristics of the census tracts where the haul routes are located are compared to the applicable City and County averages, the project area census tracts have a higher percentage of poverty and lower median household incomes.

Table G: Poverty and Income – Haul Routes for Staging Areas 1 through 4

	28th Street Haul Route	**Mitigation Haul Route**	**City of San Diego Average**	**County of San Diego Average**
% Poverty by Population	46%	N/A	15%	15%
% Poverty by Household	32%	N/A	11%	9%
Median Household Income	$17,162	$25,714	$53,060	$55,438

Table H: Poverty and Income – Haul Route for Staging Area 5

	National City Haul Route	**National City Average**	**County of San Diego Average**
% Poverty by Population	34%	22%	15%
% Poverty by Household	35%	20%	9%
Median Household Income	$20,938	$31,479	$55,438

4.2.4 Potential Adversely Affected Community from Consumption of San Diego Bay Fish

People in the project vicinity catch and consume fish and shellfish from San Diego Bay. The San Diego Bay Heath Risk Study conducted in 1990, referred to in the DTR for Tentative CAO No. R9-2011-0001 (September 15, 2010), reported that 74 percent of people who catch and consume fish from San Diego Bay are people of color. The 1990 study reported that the consumption patterns of ethnic populations indicate that they tend to eat more fish in their diet and eat parts of fish that have higher pollutant accumulation. This group of ethnic anglers and their family members have a disproportionately higher health risk from pollution in San Diego Bay than other people catching and consuming fish and shellfish in the bay.

The County of San Diego’s 1990 report, San Diego Bay Health Risk Study, identified the demographics and consumption patterns of people in the San Diego region who catch and consume fish from San Diego Bay. Three hundred and sixty nine (369) anglers (people who catch fish with a hook) were surveyed over a period of 1 year from October 1988 through October 1989. The survey was used to:

- Identify the species of fish most commonly caught by anglers of San Diego Bay;
- Identify the demographics of the population of anglers who catch fish; and
- Characterize the fish consumption patters of the anglers and others who may consume fish.

The San Diego Bay angler interview locations selected by the CDFG included Glorietta Bay, Coronado Ferry Landing, Shelter Island, Harbor Island, Spanish Landing, Embarcadero Park, Sweetwater Port District, the City of Chula Vista Bayside Park, and G Street Pier. Boat launches were also surveyed for anglers returning with their catch from the bay.

The majority of anglers surveyed lived in municipalities adjacent to San Diego Bay. Table I, from the DTR for the Tentative CAO, provides a breakdown of the anglers’ place of residence.

Table I: Anglers’ Reported Place of Residence

Residence	Percent of Total Anglers Interviewed[1]
City of San Diego	50.7%
City of Chula Vista	10.6%
City of National City	8.1%
San Diego County	15.9%
Outside San Diego County	3.5%
Undetermined	11.1%

[1] Data from County of San Diego (1990) Table IV-D, Demographic Profile of 369 Anglers.

Five distinct ethnic subpopulations were identified as constituting significant portions of the interviewed anglers: Caucasian, Filipino, Hispanic, Asian (Vietnamese, Laotian, Japanese, Cambodian, Chinese, Korean, and Thai) and Black. Table J provides a comparison of fishing patterns for the ethnic populations surveyed.

Table J: Comparison of Fishing Patterns By Ethnicity

Ethnicity	Percent of Total Anglers[1]	Fishing Frequency (Times per Month)[2]	Percent of Anglers that Caught and Ate Fish	Average Yield (grams of fish/successful trip)[3]	Percent of Anglers who Fish Year Round
Caucasian	42.0%	7.3	37.2%	1,028	78.9%
Filipino	20.1%	7.1	73.6%	2,156	60.9%
Hispanic	12.5%	4.5	40.0%	969	52.6%
Asian[4]	11.1%	4.8	87.9%	1,791	38.7%
Black	6.5%	3.9	38.9%	1,896	79.2%
Other Ethnic Groups[5]	2.2%	7.3	50.0%	767	62.5%
Unidentified	5.6%	NC	100.0%	326	NC
Total Population	100%	6.4	53.4%	1,504	67.8%

Source: Draft Technical Report for Tentative Cleanup and Abatement Order No. R9-2011-0001.
1 County of San Diego (1990) Table 1V-D, Demographic Profile of 369 Anglers.
2 A 30-day month was assumed.
3 Based on interviews only where catch was consumed.
4 Group includes Vietnamese, Laotian, Japanese, Cambodian, Chinese, Korean, and Thai.
5 Group includes Indian, American Indian, Hawaiian, and Polynesian.
NC= Not calculated

As presented in the DTR for the Tentative CAO No. R9-2011-0001, the County of San Diego (1990) drew the following conclusions from the data in Table J above:

- Caucasians and Filipinos were the most frequent anglers at 7.3 and 7.1 times per month, respectively. Asians, Hispanics and Blacks were less frequent at 4.8, 4.5, and 3.9 times per month.
- Filipinos caught and consumed fish 73.6 percent of the time while Asians caught and consumed fish 87.9 percent of the time. Caucasians, Hispanics, and Blacks all caught and consumed fish 40 percent or less of the time. This may indicate that Filipinos and Asians, more than other populations, are fishing in San Diego Bay for food rather than sport.

- In terms of average yield of fish in grams per successful trip (when fish were caught), Filipinos and Asians tended to be more successful than other portions of the population at 2,156 grams and 1,791 grams per successful trip, respectively.
- In terms of the percentages of each population that fish year round, Blacks and Caucasians had the highest percentages at 79.2 percent and 78.9 percent, respectively. Values for other populations ranged from a low of 38.7 percent for Asians to a high of 60.9 percent for Filipinos. These values are difficult to interpret because they do not contain any indication of what portion of the year was fished.

The County of San Diego also evaluated patterns of consumption by ethnicity and the distribution of risk between ethnic groups. The results are summarized in Table K.

Table K: Comparison of Consumption Patterns by Ethnicity

Ethnicity	Percent of Total Consumers[1]	Percent of Total Measured Catch[2]	Projected Percent of Total Catch[2]	Consumption Rate (grams/day)[3]
Caucasian	24	24.6	37.8	10.8
Filipino	32.6	39.0	28.7	49.5
Asian[4]	25.6	22.8	16.4	81.9
Hispanic	8.9	5.7	5.5	23.6
Black	4.7	6.5	9.7	NC
Other Ethnic Groups[5]	2.2	1.4	1.9	NC
Total	**100**	**100**	**100**	**31.2**

Source: Draft Technical Report for Tentative Cleanup and Abatement Order No. R9-2011-0001.
1 This distribution is based on a sample size of 143 interviews, representing 490.5 potential consumers.
2 These percentages represent only catch that was indicated would be consumed. These calculations assume that successful anglers not represented in the measured catch are catching fish at the same rate as those who are represented.
3 Consumption rates calculated using the following factors: fish weight, a cleaning factor, number of consumers, and fishing frequency.
4 Group includes Vietnamese, Laotian, Japanese, Cambodian, Chinese, Korean, and Thai.
5 Group includes Indian, American Indian, Hawaiian, Polynesian, and Unidentified.
NC = not calculated (sample sizes for these groups are insufficient to allow calculations of consumption rates)

County of San Diego drew the following conclusions from the data presented in Table K and other data contained in the 1990 report:

- Filipinos were determined to represent 32.6 percent of the total consumers in spite of the fact that they comprise only 20.1 percent of all anglers. Although Asians represent only 11.1 percent of the total anglers, 25.6 percent of the total consumers were Asian. Caucasians were determined to represent only 24 percent of the total consumers in spite of the fact that they comprise only 42 percent of all anglers. Hispanics and Blacks made up only 8.9 percent and 4.7 percent of the totals consumers, respectively.

- Caucasians were projected to consume 37.8 percent of the total consumed fish catch. Filipinos and Asians were projected to consume 28.7 percent and 16.4 percent of the total consumed fish catch, respectively. Blacks and Hispanics were projected to consume the smallest portion of the total consumed fish catch at 9.7 percent and 5.5 percent, respectively. While these estimates give some indication of the relative portion of total contaminated fish ingested by each group, it is important to note that other factors, such as the parts of a fish consumed, may influence the actual amount of contaminants consumed.
- The fish consumption rate of 10.8 grams/day for Caucasians is considerably lower than the 31.2 grams/day determined for the entire population. The fish consumption rates for Filipinos, Asians, and Hispanics were considerably higher than the Caucasian fish consumption rate. However, limitations on population sample sizes, especially for Hispanics and Asians, make comparisons of the consumption rates problematic.[1]

Individuals that consume a greater portion of the fish, such as its internal organs, may be at greater risk of consuming a greater amount of contaminants. Other data contained in the study indicates there were significant variations between ethnic populations in the parts of fish consumed. Only 5.6 percent of Caucasian anglers consumed the entire fish and 66.7 percent eat only the muscle. Approximately 40 percent of both Filipinos and Asians consume the entire fish. This means that on average, a given amount of fish consumed may result in a lower amount of ingested contaminants for Caucasians as compared to Filipinos and Asians.

Another study, *Survey of Fishers on Piers in San Diego Bay*, published in 2005 established that a significant subset of San Diego Bay fishers regularly catch and eat fish from the piers near contaminated areas of San Diego Bay. The Environmental Health Coalition (EHC), a nonprofit environmental justice organization, has expressed concerns that disproportionate health impacts of the contamination are borne by the low-income communities of color that catch and eat fish from San Diego Bay. The EHC[2] conducted what they classified as an "opportunity" sample survey in 2004 of people fishing from piers near the Shipyard Sediment Site, Naval Station San Diego, and in the south end of San Diego Bay to ensure the interests of this population were considered in the Tentative CAO decision-making process. The EHC described the survey group as a "…selective sample that is highly exposed to fish from near the shipyards, Naval Station San Diego, and the southern portion of San Diego Bay."

1 The fish consumption rates for Caucasians were estimated based on an interview sample size of 20 or more. The consumption rates for Asians and Hispanics were based on an interview sample size of 4 and 5 interviews respectively, and should only be considered an approximation of the actual consumption rates for those groups.

2 The EHC is a self-described non-profit environmental justice organization in San Diego dedicated to the prevention and cleanup of toxic pollution, monitoring actions causing pollution and educating communities about toxics.

The EHC reported that a total of 109 fishers were interviewed in English, Spanish, or Tagalog, as appropriate, during the winter and spring of 2004. Piers surveyed by EHC included the following:

Table L: Piers Surveyed

Fishing Pier	Approximate Miles from Shipyard Sediment Remediation Site
Convention Center (downtown San Diego)	1.7
Pepper Park Pier (National City)	3.2
Chula Vista Pier	5.1

According to the EHC, of all of the fishers surveyed, the places of residence supplied by the interviewees were as follows:

- 83 percent lived in EHC target communities such as the following:
  - National City (59 percent)
  - Barrio Logan (14 percent)
  - Western Chula Vista and Imperial Beach (10 percent)
  - Seven percent (7 percent) lived in Tijuana, Mexico
- 96 percent of the fishers surveyed were people of color and consisted of the following ethnic groups:
  - 7 percent Latino
  - 39 percent Filipino
- Of the surveyed fishers, the fishing patterns consisted of the following:
  - 58 percent fished at least once a week
  - 25 percent fished daily
- Almost two-thirds (61 percent) of the fishers reported they eat the fish they catch and 2 percent give the fish away.
- Of the surveyed fishers, 78 percent have children and 41 percent of those children eat fish caught from San Diego Bay.
- 13 percent of the fishers surveyed reported eating fish skin, among them people who fish frequently and who catch large amounts of fish.
- Of the fishers surveyed, 73 percent eat other types of seafood in addition to what they catch.

The San Diego Water Board recognizes that there are limitations to the EHC Survey. The survey was not a representative sample of all San Diego Bay fishers or all South Bay residents. The survey assumed income based on place of residence and the appearance that someone appeared to be engaged in subsistence fishing.

In the short-term, the implementation of the sediment remediation project has the potential to affect water quality, hazardous materials in the water column for the project area, and marine life. Double silt curtains and other project features and mitigation measures will reduce impacts to water quality and help to ensure that the proposed remediation project would not impair the beneficial uses of San Diego Bay, including those uses for which minority and/or low-income populations may participate in, such as recreational boating and fishing. The short term hazards and water quality impacts are less than significant with mitigation incorporated. Double silt curtains and other project features and mitigation measures will protect areas outside the immediate work area. Implementation of the proposed project will not result in any long-term adverse effects and beneficial effects of the remediation would be enjoyed by all users of San Diego Bay. Furthermore, it is anticipated that, once completed, the proposed project (remedial dredging) will improve the water quality and reduce potential sources of contaminants for marine life, including fish, in San Diego Bay.

5.0 CONCLUSION

Title VI of the federal Civil Rights Act of 1964 requires that no person, because of race, color, religion, national origin, sex, age, or handicap, be excluded from participation in, be denied benefits of, or be subjected to discrimination by any Federal Aid activity. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, issued in February 1994, requires that disproportionately high and adverse health or environmental impacts to minority and low-income populations be avoided or minimized to the extent feasible.

California law defines Environmental Justice as “the fair treatment of people of all races, cultures and income with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies” (Government Code Section 65040.12 and Public Resources Code Section 72000). The Statute requires that California State Agencies consider environmental justice in their decision-making process if their actions have an impact on the environment, environmental laws, or policies. The Statute also requires that California State Agencies promote enforcement of all health and environmental status within their jurisdiction in a manner that ensures the fair treatment of all Californians, irrespective of race, culture, and income. As a whole, California’s statutory environmental justice framework demonstrates a public policy that governmental activities that affect human health or the environment should be conducted in a manner that considers the most vulnerable populations, and ensures that environmental justice principles are adhered to.

The State Water Resources Control Board is a California Environmental Protection Agency (CalEPA) department. Its mission is to preserve and enhance the quality of California’s water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations. CalEPA’s stated mission, as described in its 2004 Intra-Agency Environmental Justice Strategy, is as follows:

> “…to accord the highest respect and value to every individual and community, by developing and conducting our public health and environmental protection programs, policies, and activities in a manner that promotes equity and affords fair treatment, accessibility, and protection for all Californians, regardless of race, age, culture, income, or geographic location. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.”

Based on the available data presented in this report, the two routes studied in the City of San Diego (the 28th Street Route and the Harbor Boulevard/Civic Center Drive Route), and the National City route (Staging Area 5), have similar socioeconomic characteristics. Therefore, population characteristics along the haul routes are not a distinguishing characteristic for the purpose of selecting a staging area. Residents and other sensitive land uses/receptors along the routes would be exposed to construction traffic associated with the haul of dredge materials. A Health Risk Analysis (LSA Associates, Inc., May 2011) indicates that the emissions along all three proposed haul routes would not result in a significant health risk. The Harbor Boulevard/Civic Center Drive route would have reduced health risk compared to the 28th Street Route due to the absence of sensitive land uses/sensitive receptors in the areas immediately adjacent to the route.

In conclusion, although there is a high percentage of low-income and minority populations in the project study area, the proposed project impacts are less than significant with mitigation incorporated; therefore, the proposed project (including alternative staging areas and haul routes) would not result in disproportionately high and adverse health or environmental impacts to minority and low-income populations. The proposed project impacts related to health risk (toxic are contaminants) and noise are less than significant. The proposed project impacts related to water quality, hazardous materials, and marine biology are less than significant with mitigation incorporated. The proposed project impacts related to traffic are reduced to less than significant with implementation of an alternative haul route. There are residences along a portion of the proposed project haul route; however, there are no residences immediately adjacent to the mitigation haul route.

The proposed project impacts related to air quality are significant and unavoidable for the proposed project and for the project alternatives.

In the short-term, the implementation of the sediment remediation project has the potential to affect water quality, hazardous materials in the water column for the project area, and marine life. Double silt curtains and other project features and mitigation measures will reduce impacts to water quality and help to ensure that the proposed remediation project would not impair the beneficial uses of San Diego Bay, including those uses for which minority and/or low-income populations may participate in, such as recreational boating and fishing. The short-term hazards and water quality impacts are less than significant with mitigation incorporated. Double site curtains and other project features and mitigation measures will protect areas outside the immediate work area. Implementation of the proposed project will not result in any long-term adverse effects to marine life, including fish, and beneficial effects of the remediation would be enjoyed by all users of San Diego Bay. Furthermore, it is anticipated that, once completed, the proposed project (remedial dredging) will improve the water quality and reduce potential sources of contaminants for marine life, including fish, in San Diego Bay.

In sum, the proposed project with suggested mitigation incorporated would not result in a disproportionate impact to low-income and minority populations. This analysis satisfies the State Water Board's obligations to consider environmental justice principals pursuant to Government Code section 65040.12.

APPENDIX I

AIR QUALITY TECHNICAL REPORT FOR SHIPYARD SEDIMENT SITE PROJECT – CONVAIR LAGOON ALTERNATIVE

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Air Quality Technical Report for the Shipyard Sediment Site Project Convair Lagoon Alternative

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May 2011

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Figures

Tables

1.0 Executive Summary

1.1 Introduction

This air quality technical report was prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) to assess if any potentially significant air quality impacts would occur in conjunction with implementation of the Convair Lagoon Alternative to the Shipyard Sediment Site Project herein referred to as the proposed alternative. The Convair Lagoon Alternative site consists of an approximately 15-acre water and land area located within the San Diego Bay (bay) in the City of San Diego, California. Figure 1 illustrates the regional location of the Convair Lagoon Alternative site. Figure 2 provides a more detailed map of the alternative site and its vicinity. The site is bounded by the San Diego Bay to the south, North Harbor Drive and the San Diego International Airport to the north, the North Harbor Drive Coast Guard Facility to the east and a rental car parking lot to the west. A bicycle path is adjacent to the northern boundary of the site, parallel to North Harbor Drive. The site is under the jurisdiction of the San Diego Unified Port District (District) and is located within Planning District 2 (Harbor Island/Lindberg Field), Planning Subarea 24 (East Basin Industrial) of the 2010 certified Port Master Plan. This report is intended to satisfy the District's requirement for a project-level air quality impact analysis by examining the impacts of the proposed alternative on air quality, and proposing mitigation measures where feasible to address significant air quality impacts.

1.2 Findings

Construction of the Convair Lagoon Alternative would not conflict with or obstruct implementation of the Regional Air Quality Strategy (RAQS) or State Implementation Plan (SIP), expose sensitive receptors to substantial pollutant concentrations, or generate substantial odors. No construction activities would exceed the significance thresholds for criteria pollutants with the exception of the transport of sediment from the Shipyard Sediment Site to the proposed confined disposal facility (CDF). Transport and placement activities would exceed the significance threshold for nitrogen oxides. This phase of construction would also take place concurrently with construction activities at the Shipyard Sediment Site, which results in additional nitrogen oxide emissions. Implementation of the Shipyard Sediment Site Project mitigation measures and the alternative-specific mitigation measure would reduce nitrogen oxide emissions, but not to a less than significant level. This impact would be a temporary significant and unavoidable impact. As a result, construction of the proposed alternative would also result in a temporary cumulatively considerable net increase in emissions of nitrogen oxides. Dewatering activities would also result in a temporary significant and unavoidable impact related to objectionable odors.

Following construction, the CDF would consist of an asphalt-paved, undeveloped, above-ground parcel of land. It would not conflict with or obstruct implementation of the RAQS or SIP, violate any air quality standard, expose sensitive receptors to substantial pollutant concentrations, generate odors, or result in a cumulatively considerable net increase in emissions of a criteria pollutant. All impacts would be less than significant.

2.0 Project Description

The proposed Shipyard Sediment Site project is the dredging of sediment adjacent to the shipyards in the San Diego Bay and the transport of the removed material to an appropriate site for disposal. The purpose of the project is to implement a Tentative Cleanup and Abatement Order issued by the California Regional Water Quality Control Board, San Diego Region (hereinafter the San Diego Water Board). The sediment removal site is located along the eastern shore of central San Diego Bay, extending approximately from the Sampson Street Extension on the northwest to Chollas Creek on the southeast, and from the shoreline out to the San Diego Bay main shipping channel to the west. The Shipyard Sediment Site alternative would entail preparation of the Shipyard Sediment Site for dredging, dredging operations, and construction of a landside pad for dewatering operations. Sediment would be dredged then transported by barge to the pad for dewatering. Following dewatering, all sediment would be hauled to a landfill for disposal. Most (85 percent) of the sediment would be transported to Otay Landfill; however, it is assumed that 15 percent of sediment would require disposal in the Kettleman Hills Landfill, a Class III landfill in Kings County, California, due to the presence of hazardous material. The Shipyard Sediment Site is located in an area of the bay with a shoreline that has elevated levels of copper, mercury, zinc, polynuclear aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs) (LSA 2011). All emissions associated with these construction phases have previously been quantified by LSA Associates, Inc in the *Air Quality Analysis, Shipyard Sediment Project, California Regional Water Quality Control Board, San Diego Region* (2011). The assumptions and calculated emissions for the construction phases associated with the Shipyard Sediment Site Project are incorporated into this report by reference.

Under the Convair Lagoon Alternative, the dredged sediment that would be transported to Otay landfill under the Shipyard Sediment Site Project would instead be disposed of in a CDF. The proposed alternative consists of the construction of a CDF, transport of the dredged sediments from the Shipyard Sediment Site, and placement of the contaminated marine sediment into the CDF in Convair Lagoon. A cross section view of the CDF is shown in Figure 3. The construction activities that would be required for implementation of the Alternative and post-construction operations that are not part of the Proposed Project are described below. Shipyard Sediment Site preparation and dredging activities that would be required under the Proposed Project would also be required for the Convair Lagoon Alternative. Under this alternative, 15 percent of the contaminated sediment would still require disposal at the Kettleman Hills Landfill. This sediment would require truck transport and would be handled in the same manner as the Shipyard Sediment Site Project. This sediment would be dredged, dewatered, and hauled to the landfill. Therefore, construction of a landside pad, pad operations, and covering of sediment would also occur under this Alternative, similar to the Proposed Project.

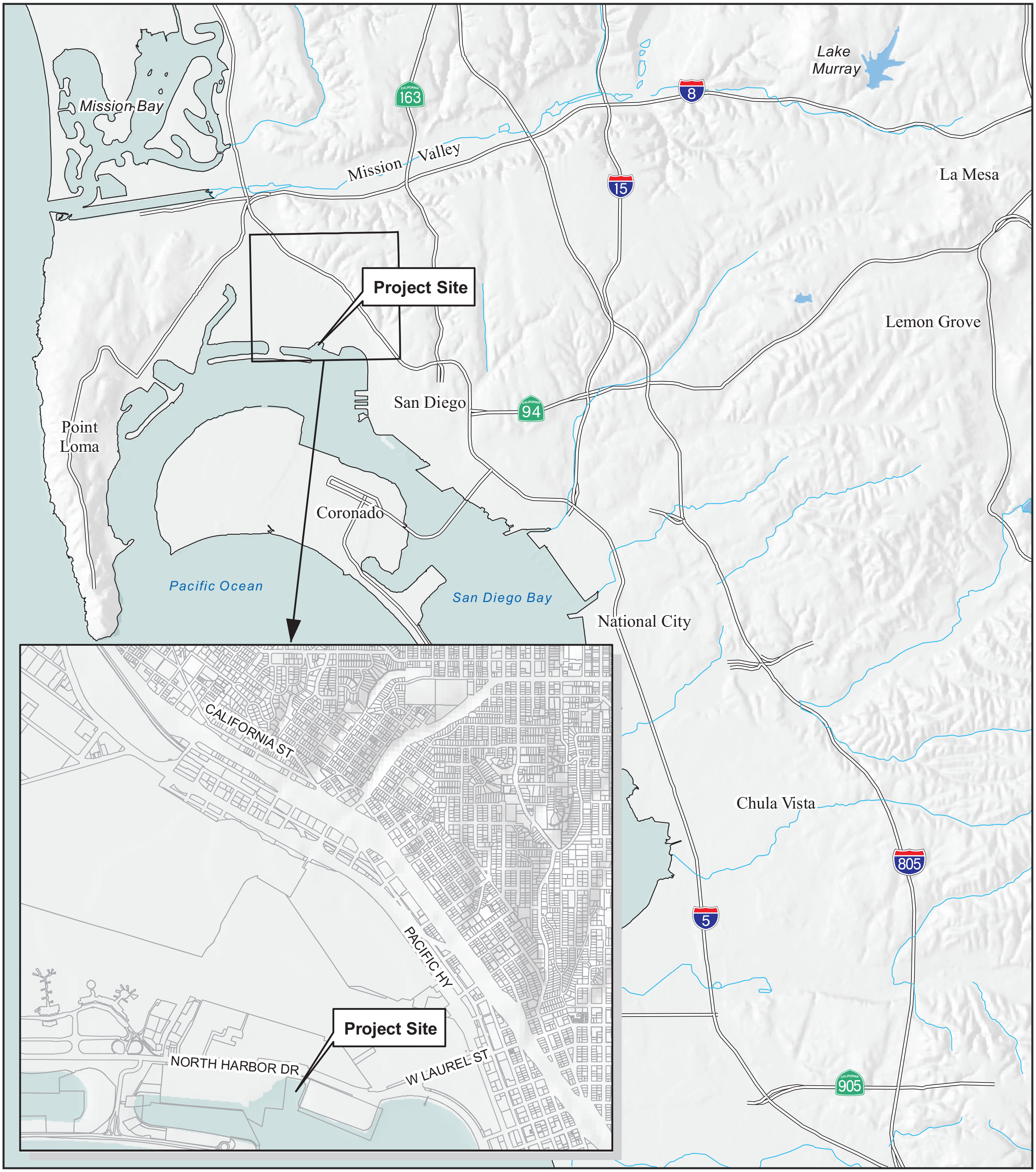

FIGURE 1

0 1 2
MILES

SOURCE: SanGIS 2011

Convair Lagoon Alternative

Regional Location

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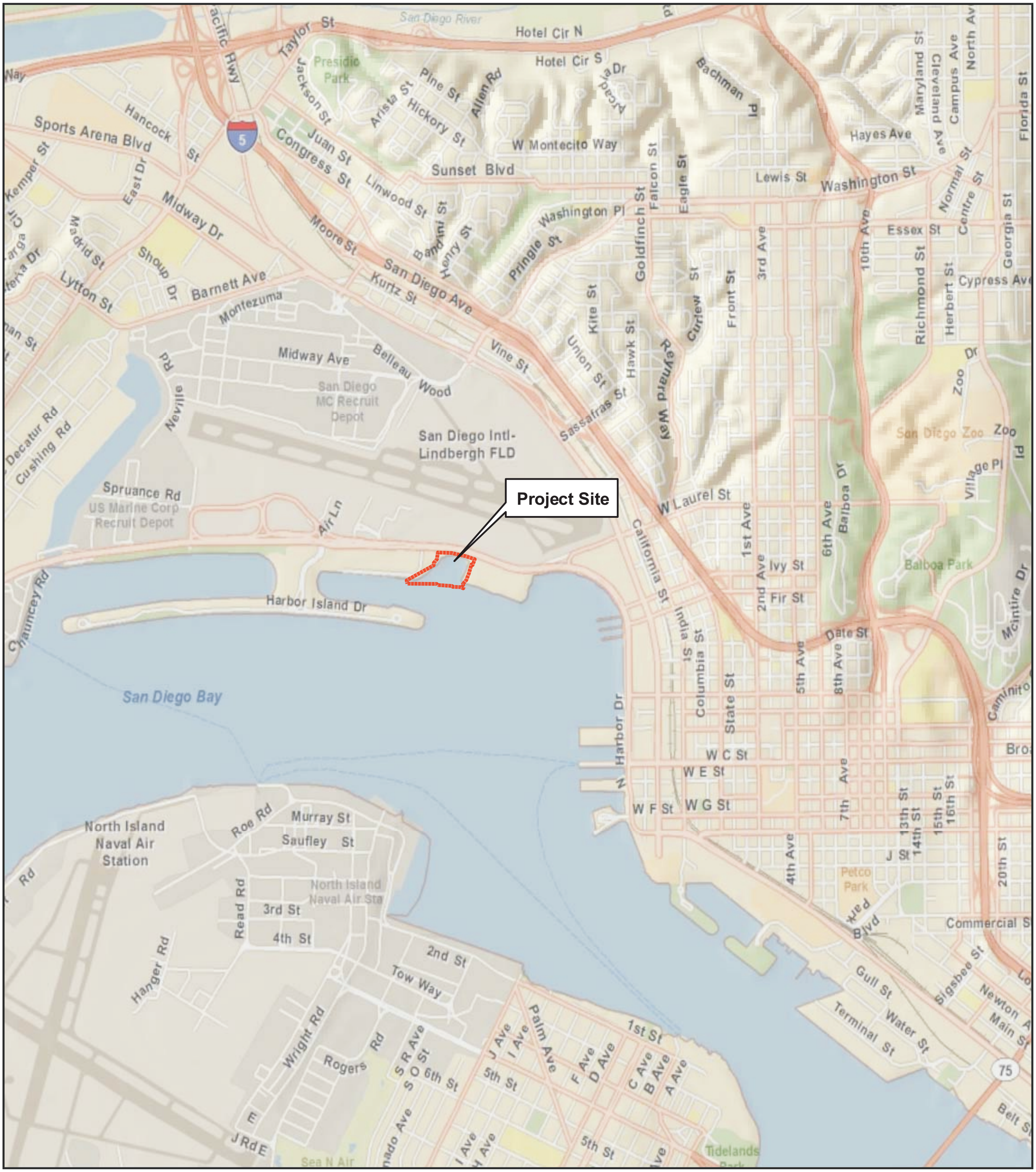

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FIGURE 2

N

0 1,500 3,000

FEET

SOURCE: SanGIS 2011

Convair Lagoon Alternative

Site Location

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DRAFT

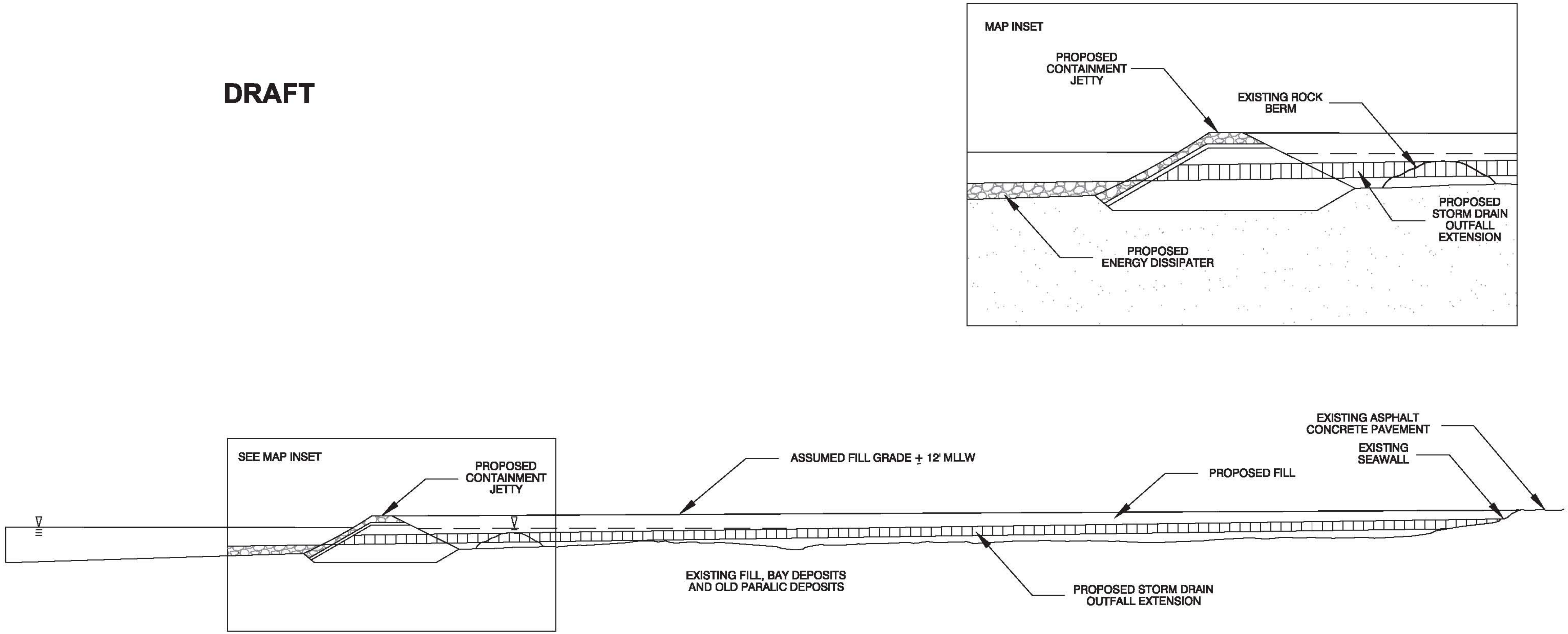

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FIGURE 3

N

Not to Scale

SOURCE: USGS 7.5' Quad - El Toro ('88)

Convair Lagoon Alternative

Containment Barrier Cross Section

Convair Lagoon Alternative Construction Activities

Construction of the CDF and placement of dredged fill is estimated to take approximately 15 months. This schedule represents the shortest possible construction duration. For modeling purposes the construction schedule assumes that dredging and transport of sediment would take only six months while construction estimates provide a range of 6 to 18 months for this phase of development. Construction of the Convair Lagoon Alternative would consist of five phases: 1) Site Preparation; 2) Containment Barrier Construction; 3) Storm Drain Outlet Extension; 4) Sediment Transport and Placement; and 5) Containment Cap Installation. Construction staging areas would be located and at a rental car facility west of the lagoon. The rental car facility would also provide inland access to the CDF. Construction would be performed during normal working hours. The five construction phases are described in detail below.

Phase 1, Site Preparation. Phase 1 of construction would involve initial site preparation activities. This phase of includes the demolition of the existing concrete pier, riprap, concrete mattress energy dissipaters, and the abandoned seaplane marine ramp. Removal of the pier would involve cutting the existing support piles to the approximate existing mud-level. The existing sub surface rock berm would remain undisturbed. Demolished facilities would be reused on-site as fill material.

In addition to demolition activities, the site would require the excavation of existing sediment in the area proposed for the containment barrier (Phase 2). To prepare the site for construction of the containment barrier, approximately three feet of existing sediment would be excavated within the footprint of the proposed barrier. This excavated material would be re-used as fill material in shallow water portions of the site. Excavation activities would occur concurrently with Phase 2.

Phase 2, Containment Barrier Construction. Phase 2 of construction would involve the installation of a rock jetty containment barrier to contain the dredged fill material from the Shipyard Sediment Site and prevent the migration of contaminated fill material into the bay. The barrier would extend an estimated 1,100 feet from the southwest corner of the site to the southeast corner of the site. The containment barrier would be constructed prior to the placement of the dredged fill (Phase 4) and would be designed to resist marine and earth forces. The containment barrier would be constructed with a 2:1 (horizontal: vertical) slope gradient.

The containment barrier would consist of three layers (core, underlayer and armor). The core layer of the containment barrier would consist of quarry-run aggregate or similar material. The underlayer would consist of small rock and would support the armor layer. The armor rock layer would be located on the bay-side of the barrier to protect the outside of the containment barrier from wave action, boat wakes and other erosional forces and would include an engineered filter on the north face, consisting of graded rock or geotextile fabric. This filter would mitigate migration of fill particles into the bay due to tidal fluctuations. A weir would be constructed on or near the containment barrier to provide a method to release site water displaced during the placement of fill. The weir would consist of a low crest in the containment barrier or a pipe in the structural fill of the barrier. The weir would employ a method for sediment management, such as a turbidity curtain.

Construction of the containment barrier would either occur by a placement or end dumping method. Placement construction would occur from a crane located on land adjacent to the site or at the crest of the containment barrier. Armor rock layers would require individual rock placement, using a crane mounted on a barge, to promote stress distribution and uniform coverage. The placement of core rock may include bottom dumping. Alternatively, the containment barrier could be constructed using an end dumping method. End dumping would involve pushing or dumping rock materials from the western shoreline to progressively build the containment barrier eastward without the use of a barge or crane. The end dumping construction method would also require individual rock placement for armor rock.

Phase 3. Storm Drain Outlet Extension. Phase 3 of construction activities would involve the extension of an existing 60-inch diameter storm drain and the extension of an existing 54-inch diameter storm drain to the face of the containment barrier. Extension would require installation of gravel rock bed to support the storm drains. A total of 2,000 cy of material would be imported and placed using an end dumping construction method. Material would be dumped from the same trucks used to import the material. Each extended storm drain would be installed with an energy dissipater apron at the mouth. Construction of these energy dissipaters would be part of construction of the containment barrier (Phase 2). Material for the new energy dissipaters would include various rock material sizes (similar to those used for the containment barrier), as well as a geotextile fabric or graded rock filter medium. Each energy dissipater would require approximately 150 cy of imported rock.

Phase 4, Sediment Transport and Placement. Phase 4 of construction would involve the transport and placement of approximately 121,890 cy of contaminated marine sediment dredged from the Shipyard Sediment Site Project at the Convair Lagoon Alternative site. Dredged contaminated marine sediment from the Shipyard Sediment Site would be transported approximately 5 miles to the Convair Lagoon Alternative site via barges and placed within the submerged areas of the lagoon as hydraulic fill. The lagoon would be filled in and become the CDF. The barge would be towed by a tug boat from the shipyard area to the Convair Lagoon, a distance of approximately five miles. The contaminated sediment would be transferred from the barges to the CDF through the use of cranes, or by pumps, pipelines and hoses.

Phase 4 of the Convair Lagoon Alternative would occur concurrently with all phases of construction at the Shipyard Sediment Site, including site preparation, dredging operations, and pad construction and operation. Similar to the Proposed Project, under this alternative, approximately 15 percent of the contaminated dredged sediment from the Shipyard Sediment Site would not qualify for placement in the CDF because of high contamination levels. This sediment would require dewatering and transportation off-site. Dewatering activities would increase the bulk of the sediment by 15 percent to 24,737 CY because the sediment would be mixed with a cement-based reagent (pozzilonics) to accelerate the drying. Dewatering activities would be the same as the dewatering activities that would occur under the Shipyard Sediment Site Project. After drying, all dredged and dewatered material would be loaded directly onto trucks for disposal at Kettleman Hills Landfill.

Phase 5, Containment Cap Installation. Phase 5 of construction would involve the importation and installation of an engineered containment cap. The engineered cap would consist of approximately nine inches of clean sand placed over the contaminated fill material, and a three inch layer of asphalt pavement over the clean sand to isolate the contaminated material from the community. Cap material is anticipated to be transported and placed conventionally by truck and earthwork equipment. Upon completion of the containment cap, the site would be relatively level and would consist of approximately 20 feet of new fill material. The top 12 inches of material would be clean, compacted, imported fill material and asphalt, whereas the underlying material would consist of contaminated dredge fill. The elevation of the site would be 10 feet above the mean lower low water (MLLW) level and a portion of the dredge fill would remain saturated beneath sea level.

Post-Construction Operation

Upon completion of construction, the site would consist of undeveloped land with an elevation approximately 10 feet MLLW. Additionally, the site would be designated Harbor Services in the Port Master Plan. Harbor Services is a use category that identifies land and water areas devoted to maritime services and harbor regulatory activities of the District, including remediation and monitoring. The Convair Lagoon Alternative does not include the construction or development of any buildings or structures on the converted site and no permanent dewatering would be required.

3.0 Regulatory Framework

3.1 Federal

Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) with states retaining the option to adopt more stringent standards or to include other specific pollutants. On April 2, 2007, the Supreme Court found that greenhouse gases (GHGs), including carbon dioxide, are air pollutants covered by the CAA; however, no NAAQS have been established for GHGs.

These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Current NAAQS are listed in Table 1. Areas that meet the ambient air quality standards are classified as "attainment" areas while areas that do not meet these standards are classified as "non-attainment" areas.

Table 1 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1] Concentration[3]	Federal Standards [2] Primary [3, 4]	Federal Standards [2] Secondary [3, 5]
Ozone (O_3)	1-hour	0.09 ppm (180 μg/m^3)	--	Same as Primary Standards
	8-hour	0.070 ppm (137 μg/m^3)	0.075 ppm (147 μg/m^3)	
Respirable Particulate Matter (PM_{10})	24 Hour	50 μg/m^3	150 μg/m^3	Same as Primary Standards
	Annual Arithmetic Mean	20 μg/m	--	
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard	35 μg/m^3	Same as Primary Standards
	Annual Arithmetic Mean	12 μg/m^3	15 μg/m^3	
Carbon Monoxide (CO)	8-hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 μg/m^3)	53 ppm (100 μg/m^3)[6]	Same as Primary Standard
	1-hour	0.18 ppm (470 mg/m^3)	100 ppb (188 μg/m^3)[6]	None
Sulfur Dioxide (SO_2)	24 Hour	0.04 ppm (105 μg/m^3)	--	--
	3 Hour	--	--	0.5 ppm (1300 μg/m^3)[7]
	1-hour	0.25 ppm (655 μg/m^3)	75 ppb (196 μg/m^3)[7]	--
Lead[8]	30 Day Average	1.5 μg/m^3	--	--
	Calendar Quarter	--	1.5 μg/m^3	Same as Primary Standard
	Rolling 3-Month Average[9]	--	0.15 μg/m^3	
Visibility Reducing Particles	8-hour	Extinction coefficient of 0.23 per kilometer - visibility of 10 miles or more due to particles.	No Federal Standards	
Sulfates	24 Hour	25 μg/m^3	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm (42 μg/m^3)	No Federal Standards	
Vinyl Chloride[8]	24 Hour	0.01 ppm (26 μg/m^3)	No Federal Standards	

(1) California standards for ozone, carbon monoxide, SO_2 (1-hour and 24-hour), NO_2, PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, lead, hydrogen sulfide, and vinyl chloride standards are not to be equaled or exceeded.

(2) National standards, other than 1-hour ozone, 8-hour ozone, 24-hour PM_{10}, 24-hour $PM_{2.5}$, and those based on annual averages, are not to be exceeded more than once a year. The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the annual fourth-highest daily maximum 8-hour concentrations is below 0.08 ppm. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile 24-hour concentrations is below 150 μg/m^3. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of the 98th percentile 24-hour concentrations is below 65 μg/m^3.

(3) Concentration expressed first in units in which it was promulgated. Equivalent units given in parenthesis are based on a reference temperature of 25°C and a reference pressure of 760 mm of mercury (1,013.2 millibar). All measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury; parts per million (ppm) in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

(4) National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

(5) National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

(6) To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). Note that the EPA standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.

(7) On June 2, 2010, the U.S. EPA established a new 1-hour SO2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. EPA also proposed a new automated Federal Reference Method (FRM) using ultraviolet technology, but will retain the older pararosaniline methods until the new FRM have adequately permeated state monitoring networks. The EPA also revoked both the existing 24-hour SO2 standard of 0.14 ppm and the annual primary SO2 standard of 0.030 ppm, effective August 23, 2010. The secondary SO2 standard was not revised at that time; however, the secondary standard is undergoing a separate review by EPA. Note that the new standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the new primary national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

(8) The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

(9) National lead standard, rolling 3-month average: final rule signed October 15, 2008.

Source: CARB, 2010a.

The CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the SIP, or State Implementation Plan. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The SIP is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The EPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

Resource Conservation and Recovery Act (RCRA) of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984

Federal hazardous waste laws are generally promulgated under the RCRA. These laws provide for the "cradle to grave" regulation of hazardous wastes. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed. DTSC is responsible for implementing the RCRA program as well as California's own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law.

3.2 State

California Clean Air Act

The CAA allows states to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. The California Clean Air Act (CCAA) was signed into law in 1988 and spelled out in statute California's air quality goals, planning mechanisms, regulatory strategies, and standards of progress. The CCAA provides the state with a comprehensive framework for air quality planning regulation. Prior to passage of the CCAA, federal law contained the only comprehensive planning framework. The CAA requires attainment of state ambient air quality standards by the earliest practicable date (CARB, 2003). The California Air Resources Board (CARB), a part of the California EPA (CalEPA) is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the California ambient air quality standards (CAAQS). CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. The CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. The CARB has primary responsibility for the development of California's SIP, for which it works closely with the federal government and the local air districts.

In addition to standards set for the six criteria pollutants, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles (see Table 1). These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Further, in addition to primary and secondary AAQS, the state has established a set of episode criteria for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and particulate matter.

These criteria refer to episode levels representing periods of short-term exposure to air pollutants that actually threaten public health.

3.3 Local

San Diego County Regional Air Quality Strategy and State Implementation Plan

The San Diego Air Pollution Control District (SDAPCD) is the local agency responsible for the administration and enforcement of air quality regulations for the San Diego Air Basin (SDAB), which includes all of San Diego County. The SDAPCD regulates most air pollutant sources, except for motor vehicles, marine vessels, aircrafts, and agricultural equipment, which are regulated by the CARB or the EPA. State and local government projects, as well as projects proposed by the private sector, are subject to SDAPCD requirements if the sources are regulated by the SDAPCD. Additionally, the SDAPCD, along with the CARB, maintains and operates ambient air quality monitoring stations at numerous locations throughout San Diego County. These stations are used to measure and monitor ambient criteria and toxic air pollutant levels.

The SDAPCD and the San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The San Diego County RAQS was initially adopted in 1991, and is updated on a triennial basis. The RAQS was updated in 1995, 1998, 2001, 2004, and most recently in April 2009. The RAQS outlines the SDAPCD's plans and control measures designed to attain the state air quality standards for ozone. The SDAPCD has also developed the SDAB's input to the SIP, which is required under the CAA for pollutants that are designated as being in non-attainment of national air quality standards for the basin.

The RAQS relies on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in the county, to project future emissions and then establish the strategies necessary for the reduction of emissions through regulatory controls. The CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and by the County of San Diego as part of the development of their general plans. As such, projects that propose development consistent with the growth anticipated by the general plans would be consistent with the RAQS. In the event that a project would propose development which is less dense than anticipated within the general plan, the project would likewise be consistent with the RAQS. If a project proposes development that is greater than that anticipated in the general plan and SANDAG's growth projections, the project might be in conflict with the RAQS and SIP, and might have a potentially significant impact on air quality.

The SIP relies on the same information from SANDAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin. The SIP also includes rules and regulations that have been adopted by the SDAPCD to control emissions from stationary sources. These SIP-approved rules may be used as a guideline to determine whether a project's emissions would have the potential to conflict with the SIP and thereby hinder attainment of the NAAQS for ozone.

In addition to the RAQS and SIP, the SDAPCD adopted the *Measures to Reduce Particulate Matter in San Diego County* report in December 2005. This report is based on particulate matter reduction measures adopted by CARB. SDAPCD evaluated CARB's list of measures and found that the majority were already being implemented in San Diego County. As a result of the evaluation SDAPCD proposed measures for further evaluation to reduce particulate matter emissions from residential wood combustion and from fugitive dust from construction sites and unpaved roads.

Clean Air Program

The District implements a Clean Air Program, the goal of which is to voluntarily reduce air emissions from current District operations in advance of regulatory action through the identification and evaluation of feasible and effective control measures for each category of District operations. This comprehensive program provides a framework for reducing air emissions at the Cruise Ship Terminal, Tenth Avenue Marine Terminal and National City Marine Terminal. The 2007 Clean Air Program Report identifies control measures that can be implemented in the near-term and measures that are part of a long-term strategy to reduce air emissions, building upon regulatory and voluntary efforts. This program applies only to the operations of the District.

San Diego Air Pollution Control District Rule 55, Fugitive Dust Control

The SDAPCD requires that construction activities implement the measures listed in Rule 55 to minimize fugitive dust emissions. Rule 55 requires the following:

1) No person shall engage in construction or demolition activity in a manner that discharges visible dust emissions into the atmosphere beyond the property line for a period or periods aggregating more than 3 minutes in any 60 minute period; and

2) Visible roadway dust as a result of active operations, spillage from transport trucks, erosion, or track-out/carry-out shall be minimized by the use of any of the equally effective trackout/carry-out and erosion control measures listed in Rule 55 that apply to the project or operation. These measures are: track-out grates or gravel beds at each egress point; wheel-washing at each egress during muddy conditions; soil binders, chemical soil stabilizers, geotextiles, mulching, or seeding; and using secured tarps or cargo covering, watering, or treating of transported material for outbound transport trucks. Erosion control measures must be removed at the conclusion of each work day when active operations cease, or every 24 hours for continuous operations.

Title 22 of the California Code of Regulations & Hazardous Waste Control Law, Chapter 6.5

The DTSC regulates the generation, transportation, treatment, storage and disposal of hazardous waste under RCRA and the California Hazardous Waste Control Law. Both laws impose “cradle to grave” regulatory systems for handling hazardous waste in a manner that protects human health and the environment.

4.0 Existing Conditions

4.1 Climate

Regional climate and local meteorological conditions influence ambient air quality. Convair Lagoon is located in the SDAB. The climate of the SDAB is dominated by a semi-permanent high pressure cell located over the Pacific Ocean. This cell influences the direction of prevailing winds (westerly to northwesterly) and maintains clear skies for much of the year. It also drives the dominant onshore circulation and helps create two types of temperature inversions, subsidence and radiation, that contribute to local air quality degradation.

Subsidence inversions occur during warmer months, as descending air associated with the Pacific high-pressure cell comes into contact with cool marine air. The boundary between the two layers of air represents a temperature inversion that traps pollutants below it. Radiation inversions typically develop on winter nights with low wind speeds, when air near the ground cools by radiation, and the air aloft remain warm. A shallow inversion layer that can trap pollutants is formed between the two layers.

In the vicinity of the alternative site, the nearest climatological monitoring station is located at San Diego International Airport, which is located at 3665 North Harbor Drive, adjacent to the northern border of Convair Lagoon, across Harbor Drive. Climatological monitoring stations collect temperature and precipitation data. The normal daily maximum temperature is 76 degrees Fahrenheit (°F) in August, and the normal daily minimum temperature is 48 °F in January, according to the Western Regional Climate Center (WRCC, 2011). The normal precipitation in the project area is 10 inches annually, occurring primarily from December through March.

The nearest National Oceanic and Atmospheric Administration (NOAA) meteorological monitoring station to the alternative site is also located at the San Diego International Airport. Meteorological monitoring stations collect data such as wind direction and wind speed, as well as air temperature and precipitation. The prevailing wind direction at this monitoring station is from the west (NOAA, 2004).

4.2 Health Effects Related to Air Pollutants

Federal and state laws regulate the air pollutants emitted into the ambient air by stationary and mobile sources. These regulated air pollutants are known as “criteria air pollutants” and are categorized as primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide, volatile organic compounds (VOC), nitrogen oxides, sulfur dioxide, and most fine particulate matter including lead and fugitive dust (PM_{10} and $PM_{2.5}$) are primary air pollutants. Of these, carbon monoxide, SO_2, PM_{10}, and $PM_{2.5}$ are criteria pollutants. VOCs and nitrogen oxides are criteria pollutant precursors that go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone and nitrogen dioxide (NO_2) are the principal secondary pollutants. Diesel particulate matter is a mixture of particles and is a component of diesel exhaust. The EPA lists diesel exhaust as a mobile source air toxic due to the cancer and non-cancer health effects associated with exposure to whole diesel exhaust.

Presented below is a description of each of the primary and secondary criteria air pollutants and their known health effects.

Carbon Monoxide (CO) is an odorless, colorless, and toxic gas. Because it is impossible to see, taste, or smell the toxic fumes, carbon monoxide can kill people before they are aware that it is in their homes. At lower levels of exposure, carbon monoxide causes mild effects that are often mistaken for the flu. These symptoms include headaches, dizziness, disorientation, nausea, and fatigue. The effects of carbon monoxide exposure can vary greatly from person to person depending on age, overall health, and the concentration and length of exposure (EPA, 2010). The major sources of carbon monoxide in the Basin are on-road vehicles, aircraft, and off-road vehicles and equipment.

Volatile Organic Compounds (VOCs) are defined as any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions. VOCs consist of non-methane hydrocarbons and oxygenated hydrocarbons. Hydrocarbons are organic compounds that contain only hydrogen and carbon atoms. Non-methane hydrocarbons are hydrocarbons that do not contain the un-reactive hydrocarbon, methane. Oxygenated hydrocarbons are hydrocarbons with oxygenated functional groups attached.

It should be noted that there are no state or national ambient air quality standards for VOCs because they are not classified as criteria pollutants. They are regulated, however, because a reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are also transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} levels and lower visibility. Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, higher concentrations of VOCs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, kidneys, and central nervous system (EPA, 1999).

The major sources of VOCs in the SDAB are on-road motor vehicles and solvent evaporation. Benzene, a VOC and known carcinogen, is emitted into the air from gasoline service stations (fuel evaporation), motor vehicle exhaust, tobacco smoke, and from burning oil and coal. Benzene is also sometimes used as a solvent for paints, inks, oils, waxes, plastic, and rubber. It is used in the extraction of oils from seeds and nuts. It is also used in the manufacture of detergents, explosives, dyestuffs, and pharmaceuticals. Short-term (acute) exposure of high doses of benzene from inhalation may cause dizziness, drowsiness, headaches, eye irritation, skin irritation, and respiratory tract irritation. At higher levels, unconsciousness can occur. Long-term (chronic) occupational exposure of high doses by inhalation has caused blood disorders, including aplastic anemia and lower levels of red blood cells (EPA, 1999).

Nitrogen Oxides (NO_x) serve as integral participants in the process of photochemical smog production. The two major forms of nitrogen oxides are nitric oxide (NO) and NO_2. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO_2 is a reddish-brown, irritating gas formed by the combination of NO and oxygen. Nitrogen oxide acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens. Nitrogen oxide is also an ozone precursor. A precursor is a directly emitted air contaminant that, when released into the atmosphere, forms, causes to be formed, or contributes to the formation of a secondary air contaminant for which a NAAQS has been adopted, or whose presence in the atmosphere will contribute to the violation of one or more NAAQS. When nitrogen oxides and VOCs are released in the atmosphere, they chemically react with one another in the presence of sunlight to form ozone.

Ozone (O_3) is one of a number of substances called photochemical oxidants that are formed when VOCs and nitrogen oxides (both byproducts of the internal combustion engine) react with sunlight. Ozone is present in relatively high concentrations in the SDAB, and the damaging effects of photochemical smog are generally related to ozone concentrations. Ozone may pose a health threat to those who already suffer from respiratory diseases as well as healthy people. Additionally, ozone has been tied to crop damage, typically in the form of stunted growth and pre-mature death. Ozone can also act as a corrosive, resulting in property damage such as the embitterment of rubber products.

Lead (Pb) is a solid heavy metal that can exist in air pollution as an aerosol particle component. An aerosol is a collection of solid, liquid, or mixed-phase particles suspended in the air. Lead was first regulated as an air pollutant in 1976. Leaded gasoline was first marketed in 1923 and was used in motor vehicles until around 1970. The exclusion of lead from gasoline helped to decrease emissions of lead in the United States from 219,000 to 4,000 tons per year between 1970 and 1997. Even though leaded gasoline has been phased out in most countries, some, such as Egypt and Iraq, still use at least some leaded gasoline (United Nations Environment Programme, 2010). Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and physical weathering of surfaces containing lead. The mechanisms by which lead can be removed from the atmosphere (sinks) include deposition to soils, ice caps, oceans, and inhalation.

Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. The more serious effects of lead poisoning include behavioral disorders, mental retardation, and neurological impairment. Low levels of lead in fetuses and young children can result in nervous system damage, which can cause learning deficiencies and low intelligence quotients (IQs). Lead may also contribute to high blood pressure and heart disease. Lead concentrations once exceeded the state and national air quality standards by a wide margin but have not exceeded these standards at any regular monitoring station since 1982. Lead is no longer an additive to normal gasoline, which is the main reason that concentration of lead in the air is now much lower. The proposed alternative would not emit lead; therefore, lead has been eliminated from further review in this analysis.

Sulfur Dioxide (SO_2) is a colorless, pungent gas. At levels greater than 0.5 parts per million (ppm), the gas has a strong odor, similar to rotten eggs. Sulfuric acid is formed from SO_2 and is an aerosol particle component that may lead to acid deposition. Acid deposition into water, vegetation, soil, or other materials can harm natural resources and materials. Although SO_2 concentrations have been reduced to levels well below state and national standards, further reductions are desirable because SO_2 is a precursor to sulfates. Sulfates are a particulate formed through the photochemical oxidation of SO_2. Long-term exposure to high levels of SO_2 can cause irritation of existing cardiovascular disease, respiratory illness, and changes in the defenses in the lungs. When people with asthma are exposed to high levels of SO_2 for short periods of time during moderate activity, effects may include wheezing, chest tightness, or shortness of breath.

Particulate Matter (PM) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulate, also known as fugitive dust, are now recognized. Course particles, or PM_{10}, include that portion of the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 one-millionths of a meter or 0.0004 inch) or less. Fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns, that is 2.5 one-millionths of a meter or 0.0001 inch or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities; however, wind action on the arid landscape also contributes substantially to the local particulate loading. Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in those people who are naturally sensitive or susceptible to breathing problems.

Fugitive dust poses primarily two public health and safety concerns. The first concern is that of respiratory problems attributable to the suspended particulates in the air. The second concern is that of motor vehicle accidents caused by reduced visibility during severe wind conditions. Fugitive dust may also cause significant property damage during strong windstorms by acting as an abrasive material agent (similar to sandblasting activities). Finally, fugitive dust can result in a nuisance factor due to the soiling of proximate structures and vehicles.

Diesel particulate matter is a mixture of many exhaust particles and gases that is produced when an engine burns diesel fuel. Many compounds found in diesel exhaust are carcinogenic, including 16 that are classified as possibly carcinogenic by the International Agency for Research on Cancer. Diesel particulate matter includes the particle-phase constituents in diesel exhaust. Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation and exposure can cause coughs, headaches, light-headedness, and nausea. Diesel exhaust is a major source of ambient fugitive dust pollution as well, and numerous studies have linked elevated fugitive dust levels in the air to increased hospital admission, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems (OEHHA, 2001) diesel particulate matter in the SDAB poses the greatest cancer risk of all the toxic air pollutants.

4.3 Historical Air Pollutant Levels

The SDAPCD operates a network of ambient air monitoring stations throughout San Diego County. The purpose of the monitoring stations is to measure ambient concentrations of air pollutants and determine whether the ambient air quality meets the NAAQS and the CAAQS. The closest ambient monitoring station to the alternative site is the San Diego (Beardsley Street) station. Table 2 presents a summary of the ambient pollutant concentrations monitored at the San Diego station during the most recent three years for which data available (2007 through 2009). The corresponding NAAQS and CAAQS are also presented in Table 2. The SDAB is currently designated as a nonattainment area for the state standard for PM_{10}, $PM_{2.5}$, 1-Hour and 8-Hour ozone, and the Federal 8-Hour Standard for ozone.

Table 2 Air Quality Monitoring Data

Pollutant	Monitoring Station	2007	2008	2009
Ozone				
Maximum 1-hour concentration (ppm)	1110 Beardsley Street, San Diego	0.087	0.087	0.085
Days above 1-hour state standard (>0.09 ppm)		0	0	0
Maximum 8-hour concentration (ppm)		0.073	0.073	0.063
Days above 8-hour state standard (>0.07 ppm)		1	1	0
Days above 8-hour federal standard (>0.075 ppm)		0	0	0
Carbon Monoxide				
Maximum 8-hour concentration (ppm)	1110 Beardsley Street, San Diego	3.01	2.6	2.77
Days above state or federal standard (>9.0 ppm)		0	0	0
Respirable Particulate Matter (PM_{10})				
Peak 24-hour concentration ($\mu g/m^3$)	1110 Beardsley Street, San Diego	111	59	60
Days above state standard (>50 $\mu g/m^3$)		24	24	18
Days above federal standard (>150 $\mu g/m^3$)		0	0	0
Fine Particulate Matter ($PM_{2.5}$)				
Peak 24-hour concentration ($\mu g/m^3$)	1110 Beardsley Street, San Diego	69.6	42	52.1
Days above federal standard (>35 $\mu g/m^3$)		9	4	3
Nitrogen Dioxide				
Peak 1-hour concentration (ppm)	1110 Beardsley Street, San Diego	0.098	0.091	0.078
Days above state 1-hour standard (0.18 ppm)		0	0	0
Sulfur Dioxide				
Maximum 24-hour concentration (ppm)	1110 Beardsley Street, San Diego	0.006	0.007	0.006
Days above 24-hour state standard (>0.04 ppm)		0	0	0
Days above 24-hour federal standard (>0.14 ppm)		0	0	0

PPM = parts per million, $\mu g/m^3$ = micrograms per cubic meter
Source: CARB, 2011

As shown in Table 2, the 8-hour ozone concentration exceeded the state standard in 2007 and 2008. The federal standard was not exceeded during this period. The federal 24-hour $PM_{2.5}$ standard was violated nine days during 2007, four days in 2008, and three days in 2009. Neither the state nor federal standards for CO, PM_{10}, NO_2, or SO_2 were exceeded at any time between 2007 and 2009. The federal annual average NO_2 standard has not been exceeded since 1978 and the state one-hour standard has not been exceeded since 1988 (SDAPCD, 2007). With one exception during October 2003, the SDAB has not violated the state or federal standards for CO since 1990 (SDAPCD, 2007).

4.4 Attainment Status

The classifications for ozone non-attainment include and range in magnitude from marginal, moderate, serious, severe, and extreme. The SDAB is currently designated as a nonattainment area for the state standard for PM_{10}, $PM_{2.5}$, 1-Hour and 8-Hour ozone, and the Federal 8-Hour Standard for ozone, as shown in Table 3.

Table 3 Attainment Status for the San Diego Air Basin

Pollutant	State Status	Federal Status
Ozone (1-hour)	Non-attainment	Note [(1)]
Ozone (8-hour)	Non-Attainment	Non-attainment[(2)]
Respirable Particulate Matter (PM_{10})	Non-attainment	Attainment
Fine Particulate Matter ($PM_{2.5}$)	Non-attainment	Attainment
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide (NO_2)	Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Lead (Pb)	Attainment	Attainment

Note [(1)] The federal 1-hour ozone standard was revoked in 2005 and is no longer in effect for the state of California.
Source: CARB, 2010b

4.5 Sensitive Receptors and Locations

CARB defines sensitive receptors as residences, schools, day care centers, playgrounds, and medical facilities, or other facilities that may house individuals with health conditions that would be adversely affected by changes in air quality. Land uses surrounding Convair Lagoon generally consist of the San Diego International Airport, airport-related commercial and industrial land uses, and Coast Guard operations. These land uses are not sensitive receptors. The sensitive land uses closest to the alternative area are the residences located near the intersection of Kettner Boulevard and West Laurel Street, approximately 0.8 mile from the alternative site, and Spanish Landing Park, approximately 0.9 mile west of Convair Lagoon. Harbor Island Park is approximately 1.1 miles southwest of Convair Lagoon, but does not include play equipment and is not considered a sensitive land use. .

5.0 Methodology and Significant Criteria

5.1 Methodology

Construction Emissions

Construction emissions for the Convair Lagoon Alternative construction phases are assessed using the Urban Emissions Model (URBEMIS, 2007, version 9.2.4) distributed by the CARB, with the exception of emissions from the tug boats required for barge transport. The URBEMIS 2007 model uses EMFAC 2007 emissions factors for vehicle traffic and Off-Road 2007 for construction equipment. Emissions from the Shipyard Sediment Site construction activities and tug boat emissions factors were provided by LSA Associates, Inc. in the Air Quality Analysis for the Shipyard Sediment Project (LSA, 2011). The construction analysis included modeling of the projected construction equipment that would be required during each phase of construction for the CDF and quantities or materials to be imported on site and exported off site. The analysis assesses maximum daily emissions from each individual phase of construction, including site preparation, jetty construction, sediment transportation and placement, and containment cap installation. To be conservative, where several construction options are being considered, the most conservative is assumed in order to analyze the worst case scenario. A complete listing of the assumptions used in the model and model output is provided in Appendix A of this report. When construction at the Shipyard Sediment Site and Convair Lagoon construction activities are projected to overlap, construction emissions from both sites are added together to determine the total maximum daily emissions.

Operational Emissions

Operational impacts are discussed qualitatively due to the lack of operational emission sources associated with the proposed alternative.

5.2 Significance Criteria

Based on Appendix G of the CEQA Guidelines, an impact related to consistency with applicable air quality plans would be considered significant if implementation of the proposed alternative would result in a conflict with, or obstruct implementation of, the RAQS or SIP.

Based on Appendix G of the CEQA Guidelines, an impact would be considered significant if the proposed alternative would violate any air quality standard or contribute substantially to an existing or projected air quality violation. The SDAPCD does not provide quantitative thresholds for determining the significance of construction or mobile source-related projects. Therefore, the following thresholds established in the *City of San Diego California Environmental Quality Act Significance Determination Thresholds* (January 2011) were used. The thresholds listed in the City's Guidelines are based on the SDAPCD's stationary source emission thresholds. Based on the criteria set forth in the City Guidelines, a project would have a significant impact with regard to construction or operational emissions if it would exceed any of the thresholds listed in Table 4. The City of San Diego does not have a threshold for $PM_{2.5}$; therefore, the EPA "Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards" published in 2005, which quantifies significant emissions as approximately 55 pounds per day, is used as the threshold.

Additionally, based on Appendix G of the CEQA Guidelines, the proposed alternative would result in a significant air quality impact if any of the following were to occur as result of the proposed alternative:

- Exposure of sensitive receptors to substantial pollutant concentrations;
- Creation of objectionable odors that would affect a substantial number of people; or
- A cumulatively considerable net increase of any criteria pollutant which the SDAB is in non-attainment.

Table 4 City of San Diego Pollutant Thresholds

Pollutant	Pounds Per Day
Carbon monoxide (CO)	550
Nitrogen Oxides (NO_X)	250
Respirable Particulate Matter (PM_{10})	100
Fine Particulate Matter ($PM_{2.5}$)	55(1)
Oxides of Sulfur (SO_X)	250
Volatile Organic Compounds (VOC)	137

(1) USEPA "Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards" published September 2005.

Source: City of San Diego, 2011

6.0 Impact Analysis and Mitigation Measures

6.1 Consistency with Regional Plans

The air quality plans relevant to this discussion are the SIP and RAQS. As discussed above, the SIP includes strategies and tactics to be used to attain and maintain acceptable air quality in the Basin; this list of strategies is called the RAQS. Consistency with the RAQS is typically determined by two standards. The first standard is whether the Convair Lagoon Alternative would exceed assumptions contained in the RAQS. The second standard is whether the Convair Lagoon Alternative would increase the frequency or severity of existing air quality violations, contribute to new violations, or delay the timely attainment of air quality standards or interim reductions as specified in the RAQS.

The RAQS rely on information from the CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in the County, to forecast future emissions and then determine the strategies necessary for the reduction of emissions through regulatory controls. The CARB mobile source emissions projections and the SANDAG growth projections are based on population and vehicle use trends and land use plans developed by the cities and the County as part of the development of the County's and cities' general plans. As such, projects that propose development consistent with, or less than, the growth projections anticipated by a general plan would be consistent with the RAQS. For this alternative the Port Master Plan is the document governing future land use that was considered as part of SANDAGs projections.

The proposed Port Master Plan Amendment (PMPA) would result in changes to the 10 acres of water use designations on the site. Under the proposed PMPA, all existing water areas of the Convair Lagoon Alternative site would change their use designation to Harbor Services (land). The Harbor Services use category in the PMP identifies land and water areas devoted to maritime services and harbor regulatory activities of the District, including remediation and monitoring. The area within the proposed PMPA boundary would be designated as Harbor Services (water)(5 acres), Industrial Specialized Berthing (water) (4.5 acres), and Boat Navigation Corridor (water) (0.5 acre). The following provides a discussion of each of the land use designation changes and their consistency with the RAQS.

The change is land use designation from Harbor Services (water) to Harbor Services (land) would not result in a change that would affect SANDAG growth projections, because the description of uses allowed for this designation is the same whether it applies to water or land uses in the Port Master Plan.

The change in designation from Industrial Specialized Birthing (water) to Harbor Services (land) would change the allowable uses for this 4.5 acre area of the Port Master Plan from a variety of marine related commercial and industrial uses, such as ship building and repair, water taxi, excursion and ferry craft, commercial fishing boat berthing, and other marine-related uses, to the proposed Harbor Services (land) designation which would only allow maritime services and harbor regulatory activities of the District, including remediation and monitoring. The proposed land use designation would therefore allow less intense development because marine services under the proposed Harbor Services designation would only allow service related activities, whereas the Industrial Specialized Birthing would allow more intense industrial and commercial related water uses. Therefore this change in land use designation would not result in development that would be greater than the growth projections developed by SANDAG.

The last land use designation that would be changed as part of the project would be the change from the 0.5-acre Boat Navigation Corridor designation (water) to Harbor Services (land). The existing designation is a water category for those water areas delineated by navigational channel markers or by conventional waterborne traffic movements. This category does not allow any land use development that would be part of the SANDAG's growth projections, whereas the proposed Harbor Services (land) designation would allow marine services development. However, the marine services use is less intense than the Industrial Specialized Birthing (water) designation that will also be changed to Harbor Services (land). Therefore the 0.5 acre increase in development intensity associated with the change from Boat Navigation Corridor is offset by the less intense development associated with the change from Industrial Specialized Birthing (water). The end result is that the proposed PMPA would be consistent with the SANDAG growth projections used in developing the RAQS.

The second standard is whether the Convair Lagoon Alternative would increase the frequency or severity of existing air quality violations, contribute to new violations, or delay the timely attainment of air quality standards or interim reductions as specified in the RAQS. This standard applies to long-term project operational emissions. Because nearly all of the Convair Lagoon Alternative generated air pollutant emissions are associated with short-term construction activities, this standard would not apply to this alternative.

Mitigation Measures

The proposed alternative would not conflict with, or obstruct implementation of applicable air quality plans; therefore, no mitigation measures are required.

6.2 Conformance to Federal and State Ambient Air Quality Standards

Impact Analysis

Construction

Air pollutant emission sources during CDF construction would include exhaust and particulate emissions generated from construction equipment, tug boat operations during sediment transport, and truck trips to transport imported material from the Convair Lagoon site. As discussed above, construction of the Convair Lagoon Alternative is estimated to occur over a duration of approximately 15 months and would consist of five phases: 1) Site Preparation; 2) Containment Barrier Construction; 3) Storm Drain Outlet Extension; 4) Sediment Transport and Placement; and 5) Containment Cap Installation. Dump trucks with a capacity of 12.22 cubic yards (CY) were assumed for the importation and exportation of materials for all phases of construction (LSA 2011). During each construction phase, the Convair Lagoon Alternative would employ approximately ten construction workers. It is assumed that each worker would generate four trips per day, for a total of 40 average daily worker trips. Construction would occur Monday through Friday for eight hours during normal working hours. The phase-specific assumptions used to determine the emissions of each of these five construction phases are described below.

As discussed in the Project Description, the Convair Lagoon Alternative would also require the construction activities associated with the preparation of the Shipyard Sediment Site for dredging, and dredging operations. Additionally, construction of a landside pad, pad operations, and covering of sediment would occur under this Alternative to prepare a portion of the sediment for disposal at the Kettleman Hills Landfill. All emissions associated with these construction phases have previously been quantified by LSA Associates, Inc in the *Air Quality Analysis, Shipyard Sediment Project, California Regional Water Quality Control Board, San Diego Region* (2011). The assumptions and calculated emissions for the construction phases associated with the Shipyard Sediment Site project are incorporated herein by reference.

Phase 1: Site Preparation. This phase of construction would include the demolition of the existing concrete pier, riprap, concrete mattress energy dissipaters, and the abandoned seaplane marine ramp. Excavation for the containment barrier is part of site preparation; however, it would occur concurrently with containment barrier construction. Therefore, emissions from excavation activities are addressed below under Phase 2. Removal of the pier would involve cutting the existing support piles to the approximate existing mud-level. In total, approximately 500 CY of materials would be demolished. Demolished facilities would be reused on-site as fill material. Demolition would take approximately two months to complete. Demolition would be conducted from the existing shoreline using tracked excavators with breaker hammers, and loaders. Table 5 shows the maximum daily emissions that would occur from site preparation in comparison with the thresholds of significance. As shown in Table 5, site preparation related emissions would be below the significance thresholds.

Table 5 Site Preparation Maximum Daily Emissions

Construction Phase	Pollutant Emissions (pounds/day)					
	CO	**NO_X**	**VOC**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Site Preparation	19	38	5	0	2	2
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	No	No	No	No	No

Bold = Exceeds threshold
CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: URBEMIS, 2007. See Appendix A for data sheets.

Phase 2: Containment Barrier Construction. Excavation and construction of the containment barrier jetty would take approximately four months and would occur concurrently. To prepare the site for construction of the containment barrier, approximately three feet of existing sediment would be excavated within the footprint of the proposed barrier for a total of approximately 13,000 CY of excavated material. This excavated material would be stockpiled on the adjacent rental car parking lot and re-used on-site as fill material in shallow water portions of the site. The excavated material would be removed by dredging equipment from the shoreline, either hydraulically by pumped pressure, or by crane and clamshell. Based on the air quality analysis prepared for the Port of Los Angeles Channel Deepening project (Port of Los Angeles, 2009), use of a crane and clamshell would be the worst-case scenario in this situation and is assumed for this analysis. Equipment would consist of a main hoist that consists of the crane and clamshell, and two large generators to remove the material and stockpile it in the rental car parking lot. Subsequent to completion of the containment barrier this material would moved to the CDF.

Rock and aggregate material used to construct the containment barrier would be imported from a nearby quarry located approximately 15 miles from the alternative site. In total, the containment barrier would require the import of approximately 49,000 CY of materials, including: 8,000 CY of armor rock material, 3,000 CY of underlayer rock material, and 38,000 CY of core aggregate material. The containment barrier would include an engineered filter on the north face, consisting of graded rock or geotextile fabric. This filter would mitigate migration of fill particles into the bay due to tidal fluctuations. The filter would be approximately 7,000 square yards and would be anchored to the containment barrier with 2,000 CY of imported rock. The jetty would also include two energy dissipaters for the extended storm drains, which would require 150 CY of imported material each. Therefore, a total of 51,300 CY would be imported during this phase. A weir would be constructed and would consist of a low crest in the containment barrier or a pipe in the structural fill of the barrier.

Construction of the containment barrier would occur using either the placement method or the end dumping method. Placement construction is considered the worst case scenario because it would require use of a barge and a crane, which would require towing by a tug boat. The crane would be used from both the land side for movement of material into a barge and from the barge for placement of rock and other material associated with the confinement barrier. Armor rock layers would require individual rock placement, using a crane mounted on a barge, to promote stress distribution and uniform coverage. The placement of core rock may include bottom dumping. It is assumed one barge would be used and the tug boat would operate for eight hours.

Other construction equipment required for the construction of the containment barrier would include a front loader, hydraulic pumps, and cranes.

Table 6 shows the maximum daily emissions that would occur from excavation and jetty construction in comparison with the thresholds of significance. As shown in Table 6, related emissions would be below the significance thresholds.

Table 6 Barrier Construction Maximum Daily Emissions

Construction Phase	Pollutant Emissions (pounds/day)					
	CO	**NO_X**	**VOC**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Excavation and Import and Export of Material	30	92	7	0	23	7
Installation of Jetty	22	28	4	0	2	1
Tug Boat Operation	15	81	3	1	3	2
Sum of Barrier Construction Emissions	*67*	*201*	*14*	*1*	*28*	*10*
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	No	No	No	No	No

CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: URBEMIS, 2007, and LSA, 2011 See Appendix A for data sheets.

Excavation and construction of the containment barrier may overlap with site preparation at the Convair Lagoon. Table 7 shows the maximum daily emissions that would occur from concurrent site preparation and containment barrier construction at Convair Lagoon. As shown in this table, simultaneous site preparation, excavation, and construction of the containment barrier at the Convair Lagoon would not exceed any significance thresholds.

Table 7 Convair Lagoon Site Preparation and Containment Barrier Construction Maximum Daily Emissions

Construction Phase	Pollutant Emissions (pounds/day)					
	CO	**NO_X**	**VOC**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Site Preparation	19	38	5	0	2	2
Containment Barrier Construction	67	201	14	1	28	10
Total Phase 1 and Phase 2 Emissions	*86*	*239*	*19*	*1*	*30*	*12*
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	No	No	No	No	No

Bold = Exceeds threshold
CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: URBEMIS, 2007. See Appendix A for data sheets.

Phase 3: Storm Drain Outlet Extension. Extension of two existing on-site storm drains to the face of the containment barrier would take two months and would occur concurrently with construction of the jetty. Extension would require installation of a gravel rock bed to support the storm drains. A total of 2,200 CY of material is assumed to be imported and placed using the end dumping construction method. The extension of storm drains and construction of energy dissipaters would require earthwork or marine machinery, including cranes and an excavator. According to the EPA, Category 1 marine equipment, which typically includes non-locomotive engines such as construction equipment, uses engines that are similar to land-based large earth moving machines (EPA, 1999). Therefore, land-based construction equipment including a grader and backhoe are used to estimate marine equipment emissions. Table 8 shows the maximum daily emissions that would occur from extension of the storm drains in comparison with the thresholds of significance. As shown in Table 8, storm drain extension emissions would be below the significance thresholds.

Table 8 Storm Drain Extension Construction Maximum Daily Emissions

	Pollutant Emissions (pounds/day)					
Construction Phase	**CO**	**NO_X**	**VOC**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Material Import	1	3	0	0	1	1
Construction of Rock Containments	22	28	4	0	2	1
Sum of Storm Drain Extension Emissions	*23*	*31*	*4*	*0*	*3*	*2*
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	No	No	No	No	No

CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: URBEMIS, 2007. See Appendix A for data sheets.

Storm drain extension may occur concurrently with the end of excavation and construction of the containment barrier at the Convair Lagoon. Table 9 shows the maximum daily emissions that would occur from concurrent storm drain extension and containment barrier construction at Convair Lagoon. As shown in this table, simultaneous excavation and construction of the containment barrier and storm drain extension would not exceed any significance thresholds.

Table 9 Storm Drain Extension and Containment Barrier Construction Maximum Daily Emissions

	Pollutant Emissions (pounds/day)					
Construction Phase	**CO**	**NO_X**	**VOC**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Storm Drain Extension	23	31	4	0	3	2
Containment Barrier Construction	67	201	14	1	28	10
Total Phase 2 and Phase 3 Emissions	*90*	*232*	*18*	*1*	*31*	*12*
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	No	No	No	No	No

Bold = Exceeds threshold
CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: LSA, 2011

Phase 4: Sediment Transport and Placement. Phase 4 of construction would involve the transport and placement of approximately 121,890 CY of contaminated marine sediment dredged from the Shipyard Sediment Site. It is assumed that the transport and placement phase would take six months. Dredged contaminated marine sediment from the Shipyard Sediment Site Project would be transported to the Convair Lagoon Alternative site via barges and placed within the submerged areas of the lagoon as hydraulic fill. The contaminated marine sediment would be transported via barges towed by 1,650 horsepower tug boats from the shipyard area to the Convair Lagoon Alternative site. It is assumed that a maximum of four tug boats and barges would be required per day and that each of the tug boats would be operating for eight hours per day, which is consistent with the assumptions used for the proposed Shipyard Sediment Site Project. The contaminated sediment would be transferred from the barges to the CDF through the use of pumps, pipelines and hoses, or clamshell cranes. For this phase of construction the use of pumps represents the worst case scenario based on information provided in the *Final EIS for the Proposed Homeporting of Additional Surface Ships at Naval Station Mayport, Florida*. This EIS identified offloading dredged sediment from barges, using pumps that would be powered by a 50 horsepower diesel engine, with two pumps required per barge (NAVFAC, 2008). In addition to the sediment placed in the CDF, this alternative includes approximately 24,737 CY of sediment that would be hauled by truck from the Shipyard Sediment Site dewatering area to Kettleman Hills Landfill, located approximately 480 miles round trip from the dewatering area.

The sediment from the Shipyard Sediment Site may include elevated levels of copper, mercury, zinc, PAHs, and PCBs (LSA 2011). PAHs are not VOCs (ATSDR 1996); therefore, heavy metals and PAHs in the sediment are not criteria pollutants. Some PCBs may exist as vapor; however, in water PCBs bind strongly to organic particles and bottom sediments (ATSDR, 2001). Therefore, the PCBs associated with the wet shipyard sediment would be bound to the sediment and would not result in additional VOC emissions. The potential for sensitive receptors to be exposed to these pollutants is discussed below in Section 6.3.

Table 10 shows the maximum daily emissions that would occur from the transfer and placement of sediment in comparison with the thresholds of significance. As shown in Table 10, all emissions would be below the significance thresholds, with the exception of emissions of nitrogen oxides.

Table 10 Sediment Transport and Placement Maximum Daily Emissions

Construction Phase	Pollutant Emissions (pounds/day)					
	CO	**NO_X**	**VOC**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Tug Boat Operations	61	325	13	5	10	10
Material Placement	35	40	7	0	3	2
Kettleman Hills Landfill Disposal Truck Trips	54	155	11	0	7	6
Sum of Phase 4 Emissions	*150*	***520***	*31*	*5*	*20*	*18*
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	**Yes**	No	No	No	No

Bold = Exceeds threshold
CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: URBEMIS, 2007, and LSA, 2011. See Appendix A for data sheets.

Sediment transport and placement of the contaminated sediment in the CDF would occur concurrently with construction activities at the Shipyard Sediment Site. Site preparation would occur prior to dredging and pad construction activities. However, dredging would potentially overlap with landside pad construction and operation, and covering of the sediment near structures. The total maximum daily emissions that would result from sediment transport and placement in the CDF concurrently with the Shipyard Sediment Site preparation are shown in Table 11. The total maximum daily emissions that would result from sediment transport and placement concurrently with Shipyard Sediment Site dredging, pad construction and operation, and covering of sediment are shown in Table 12. As shown in these tables, emissions of nitrogen oxides would exceed significance thresholds during any phase of Shipyard Sediment Site construction concurrent with sediment transfer and placement in the CDF.

Table 11 Convair Lagoon Sediment Transfer and Placement and Shipyard Sediment Site Debris and Pile Removal Maximum Daily Emissions

	Pollutant Emissions (pounds/day)					
Construction Phase	**CO**	**NO_X**	**VOC**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Sediment Transport and Placement	150	**520**	31	5	20	18
Debris and Pile Removal	54	148	8	5	5	5
Total Emissions	*204*	***668***	*39*	*10*	*25*	*23*
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	**Yes**	No	No	No	No

Bold = Exceeds threshold
CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: URBEMIS, 2007, and LSA, 2011 See Appendix A for data sheets.

Table 12 Sediment Transport and Placement and Shipyard Sediment Site Construction Maximum Daily Emissions

	Pollutant Emissions (pounds/day)					
Construction Phase	**CO**	**NO_X**	**VOC**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Sediment Transport and Placement	150	**520**	31	5	20	18
Dredging of Shipyard Sediment Site(1)	10	16	1	4	1	1
Landside Operations – Pad Construction	83	164	14	20	9	8
Landside Operations – Operation(1)	20	39	3	7	2	2
Covering Sediment Near Structures	31	105	6	4	4	4
Total Emissions	*294*	***844***	*55*	*40*	*36*	*33*
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	**Yes**	No	No	No	No

(1) These emissions do not include the tug boat emissions and truck trips associated with sediment transport for the Shipyard Sediment Site Project because these trips would not occur under the Convair Lagoon Alternative. Barge and truck haul trip emissions that would occur under the Alternative are included in the emissions in Table 10.
Bold = Exceeds threshold
CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: LSA, 2011

Phase 5: Containment Cap Construction. Containment cap construction would involve the import and installation of a one-foot thick containment cap consisting of sand and asphalt. This construction phase would have a duration of approximately four months. The engineered cap would consist of clean sand placed over the contaminated fill material, then paved with asphalt, to isolate the contaminated material from the community. During this phase of construction, approximately 12,000 CY of sand 4,000 CY of asphalt would be imported to the site and placed above the contaminated sediment by unloading the sand directly from the trucks. Construction equipment required for Phase 5 would include trucks and earthwork equipment such as a graders and loaders. Following placement of the sand cap, the cap would be paved with asphalt. Table 13 shows the maximum daily emissions that would occur from the construction of the cap in comparison with the thresholds of significance. As shown in Table 13, all cap construction emissions would be below the significance thresholds.

Table 13 Containment Cap Construction Maximum Daily Emissions

	Pollutant Emissions (pounds/day)					
Construction Phase	**CO**	**NO_X**	**VOC**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Import of Material	3	9	1	0	1	1
Construction of Cap	25	30	4	0	2	2
Paving	15	11	3	0	1	1
Sum of Emissions	*43*	*50*	*8*	*0*	*4*	*4*
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	No	No	No	No	No

Bold = Exceeds threshold
CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: URBEMIS, 2007. See Appendix A for data sheets.

Summary. None of the individual phases of construction would exceed the significance thresholds for any pollutant, with the exception of the sediment transfer and placement phase. Sediment transfer and placement would exceed the significant thresholds for nitrogen dioxide. Additionally, this phase of construction would occur concurrently with construction activities at the Shipyard Sediment Site, which would result in additional nitrogen oxide emissions. Therefore, this impact would be potentially significant.

Operational

Upon completion of construction, the site would consist of undeveloped land with an elevation of approximately 10 feet MLLW. The Convair Lagoon Alternative does not include the development of any buildings or structures on the converted site and no permanent dewatering would be required. Therefore, the CDF does not propose any stationary sources of criteria air pollutants. Occasional vehicle trips may be required for monitoring, maintenance, and, repair of the cap, which would require minimal vehicles trips and equipment. Therefore, these activities would not result in emissions that would exceed significance thresholds. Operational emissions associated with the CDF would be less than significant.

Mitigation Measures

Mitigation Measure 1 through Mitigation Measure 9 described in the Air Quality Analysis for the Shipyard Sediment Project would also be required for the Convair Lagoon Alternative. Additionally, mitigation measure AQ-1 would reduce impacts related to emissions of nitrogen oxides during the barge transfer of shipyard sediment to the CDF. The proposed alternative would not exceed the significant thresholds during any other phase of construction, or during operation; therefore, no mitigation measures are required for the other phases of construction or operational emissions.

AQ-1 **Prohibit Tug Boat Idling**. The applicant responsible for the tug boat operation shall ensure that tug boats not be allowed to idle during any barge loading and unloading activities, unless the tug boat is actively engaged in operations.

Significance after Mitigation

No quantification for the emissions reduction associated with Mitigation Measures 1 through 9 is provided in the Air Quality Analysis for the Shipyard Sediment Project; however, these measures would minimize nitrogen oxide emissions by requiring the use of high-efficiency equipment, proper maintenance of equipment, shutting off engines when not in use, timing construction activities to not coincide with peak-hour traffic, and encouraging ridesharing and transit use. In addition, mitigation measure AQ-1 would limit tug boat operation to four hours per day per tug boat. The maximum daily emissions during sediment transport and Shipyard Sediment Site construction activities with implementation of mitigation measure AQ-1 are shown in Table 14. As shown in this table, implementation of mitigation measure AQ-1 would reduce emissions of nitrogen oxides during Phase 4 of Alternative construction, but not to a less than significant level. Since it is unknown whether the Shipyard Sediment Site mitigation measures would reduce this impact to a less than significant level, this temporary impact would remain significant and unavoidable.

6.3 Impacts to Sensitive Receptors

CARB defines sensitive receptors as residences, schools, day care centers, playgrounds, and medical facilities, or other facilities that may house individuals with health conditions that would be adversely affected by changes in air quality. The two primary emissions of concern regarding health effects for land development are carbon monoxide and diesel particulates.

Impact Analysis

Carbon Monoxide Hotspots

Carbon monoxide is the criteria pollutant that is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere. Long-term adherence to ambient air quality standards is typically demonstrated through an analysis of localized carbon monoxide concentrations. Areas of vehicle congestion have the potential to create carbon monoxide hot spots. These hot spots typically occur at intersections where vehicle speeds are reduced and idle time is increased. Intersections that tend to exhibit a significant carbon monoxide concentration typically operate at level of service (LOS) D or worse.

Table 14 Sediment Transfer Daily Maximum Emissions with Implementation of Mitigation Measure AQ-1

Construction Phase	Pollutant Emissions (pounds/day)					
	CO	**NO_X**	**VOC**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Tug Boat Operations	61	325	13	5	10	10
Material Placement	35	40	7	0	3	2
Kettleman Hills Landfill Disposal Truck Trips	54	155	11	0	7	6
Dredging of Shipyard Sediment Site(1)	10	16	1	4	1	1
Landside Operations – Pad Construction	83	164	14	20	9	8
Landside Operations – Operation(1)	20	39	3	7	2	2
Covering Sediment Near Structures	31	105	6	4	4	4
Total Unmitigated Emissions	*294*	***844***	*55*	*40*	*36*	*33*
Reduction in Tug Boat Emissions from Implementation of Mitigation Measure AQ-1	(- 31)	(-163)	(-7)	(-2)	(-5)	(-5)
Total Emissions with Mitigation Measure AQ-1	*263*	***681***	*48*	*38*	*31*	*28*
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	**Yes**	No	No	No	No

Bold = Exceeds threshold
CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: URBEMIS, 2007, and LSA, 2011. See Appendix I for data sheets.

The Convair Lagoon alternative would result in a temporary increase in vehicle trips on local roads during construction. However, similar to the Shipyard Sediment Site Project, construction of the Convair Lagoon Alternative would not change the number of long-term off-site vehicle trips. Upon completion of construction, the Convair Lagoon Alternative would consist of an undeveloped, above-ground parcel of land. No permanent traffic would occur from operation of the Convair Lagoon Alternative. Occasional vehicle trips for monitoring, maintenance, or repair of the cap would not impact the level of service of local intersections and would not result in a carbon monoxide hotspot. Therefore, no significant CO contributions would occur in the project vicinity.

Toxic Air Contaminants

Diesel Particulate Matter. Diesel trucks and other diesel engines are sources of diesel particulate matter. Similar to the Shipyard Sediment Site Project, construction of the CDF would require the use of heavy construction equipment and up to approximately 100 one-way diesel truck trips per day. Construction emissions would be temporary and would not result in a long-term increase in exposure to TAC emissions. Additionally, the LSA report included a health risk assessment of truck trips associated with the Shipyard Sediment Site Project. The Proposed Project would also result in a maximum of 100 truck trips per day and would result in greater total truck trips than the Convair Lagoon Alternative because all of the contaminated sediment would be transported by truck. The health risk assessment results indicated that the truck trips associated with the Shipyard Sediment Site project would not substantially increase cancer, chronic or acute health risks (LSA 2011). Following construction, the sand cap would not require diesel trucks for maintenance of the cap. Therefore, because the Proposed Project does not represent a health risk with respect to diesel particulate matter and the Convair Lagoon

Alternative will result in fewer truck trips than the Proposed Project, diesel particulate matter emissions would be a less than significant health risk.

Contaminated Sediment. Mercury, zinc, copper, PAHs and PCBs bind to sediment and may be introduced to the air as part of dust (NOAA, 1996; ATSDR, 1996, 2001, 2004, and 2005). Therefore, if the contaminated sediment would be disturbed so that fugitive dust particles would be released into the air, exposure to these pollutants may occur. However, similar to construction activities for the proposed project, the Alternative would involve transport and placement of wet material. Similar to the Proposed Project, up to 15 percent of the dredged contaminated sediments would require dewatering prior to being transported to a landfill. The drying area would be surrounded by k-rails and sealed with foam and impervious fabric to form a confined area. As a result, little fugitive dust is expected to be generated by these operations (LSA 2011). In addition, the Convair Lagoon Alternative CDF includes a sand and asphalt cap to prevent contaminated sediment near the surface from becoming fugitive dust particles that would be released into the air following construction.

Additionally, construction activities would include several safeguards intended to protect water quality that would also minimize the potential release of contaminants during activities that would disturb the sediment. Silt and/or air curtains would be placed around the barges during barge loading operations, and unloading activities would utilize enclosed pipes or clamshell cranes to unload the sediment into the CDF. These measures would minimize the potential for sediment to be released into an area where the sediments have the potential to dry and become airborne. Transport and handling of the contaminated sediment would also be required to comply with numerous federal, state and local regulations that require strict adherence to specific guidelines regarding the use, transportation, and disposal of hazardous materials, including RCRA, which provides the ‘cradle to grave’ regulation of hazardous wastes, and CCR Title 22, which regulates the generation, transportation, treatment, storage and disposal of hazardous wastes. Therefore, potential exposure of sensitive receptors to pollutants from transportation and handling of the contaminated sediment would be less than significant.

Stationary Sources. Stationary sources of TAC emissions identified in CARB’s Air Quality and Land Use Handbook (2005) are freeways, rail yards, ports, refineries, dry cleaners, and large gas dispensing facilities. The Convair Lagoon Alternative would consist of an undeveloped, above-ground parcel of land. It would not result in a source of stationary TAC emissions. Additionally, the Convair Lagoon Alternative does not propose any new sensitive land uses. Therefore, the Convair Lagoon Alternative would not expose any sensitive receptors to a substantial pollutant concentration and impacts would be less than significant.

Mitigation Measures

Implementation of the alternative would result in a less than significant impact with respect to the exposure of sensitive receptors to excessive carbon monoxide hotspots and toxic air contaminants. No mitigation is required.

Significance after Mitigation

No mitigation measures are required. This impact would be less than significant.

6.4 Objectionable Odors

Impact Analysis

Construction associated with implementation of the Convair Lagoon Alternative could result in minor amounts of odor compounds associated with diesel heavy equipment exhaust. According to the Ventura County Air Pollution Control District (VCAPCD), stationary land uses that generate objectionable odors may create a nuisance to receptors up to two miles away from the source (VCAPCD 2003) include wastewater treatment plants, petroleum refineries, and dairy and feed lots, among other industrial and agricultural uses. Construction emissions do not result in odors nearly as strong as these land uses; therefore, a two mile screening threshold is conservative for this analysis. The nearest existing sensitive receptor to the construction site are the residences located approximately 0.8 mile from the Alternative site, and the Spanish Landing Park, located approximately 0.9 mile west of Convair Lagoon, that may be exposed to temporary nuisance odors from construction. Not all construction equipment would be operating at once, and would be located throughout the construction and staging areas, so that the potential for a particular receptor to be exposed to odors during construction may not occur. Therefore, nuisance odors would be intermittent and would cease upon the completion of construction. Additionally, visitors to the park would only be exposed to odors for the short period of time while they are using the park facilities. The residences are currently exposed to sources of exhaust odors from the major roadways between the residences and the Alternative site, including Pacific Highway and Interstate 5. Therefore, construction would not expose a substantial number of people to new nuisance odors. Land uses immediately surrounding the construction area are the San Diego International Airport, the United States North Harbor Drive Coast Guard Facility, and a rental car parking lot. These land uses would not be sensitive to intermittent diesel odors because they are not considered sensitive receptors. Therefore, similar to the Proposed Project, impacts associated with nuisance odors from diesel exhaust would not be significant under the Convair Lagoon Alternative.

Similar to the proposed project, approximately 15 percent of dredged contaminated sediment would require dewatering as part of the Convair Lagoon Alternative. Additionally, dredged sediment from the Convair Lagoon Site for containment barrier construction would be stockpiled during construction of the barrier. It is anticipated that the dredged sediment from both sites will contain organic materials and that the decomposition of the organic matter may generate unpleasant odors. Therefore, similar to the Proposed Project, the dredged material may result in a significant temporary odor impact in the vicinity of the dredging and dredge drying operations.

The CARB's Air Quality and Land Use Handbook identifies a list of the most common sources of odor complaints received by local air districts. Typical sources of odor complaints include facilities such as sewage treatment plants, landfills, recycling facilities, petroleum refineries, and livestock operations. The alternative proposes the development of a CDF. The contaminated sediment contains organic matter that may emit odors if it would be exposed to the air and allowed to decay. However, upon completion of CDF construction, the sediment would be completely contained within an asphalt-paved, undeveloped parcel of land located approximately 10 feet MLLW. Paved lots do not generate objectionable odors. Therefore, the alternative would not generate objectionable odors and odor impacts would be less than significant.

Mitigation Measures

Implementation of Shipyard Sediment Site Mitigation Measure 10 described in the Air Quality Analysis for the Shipyard Sediment Project would require the application of a mixture of Simple Green and water to the excavated sediment as part of odor management to accelerate the decomposition process and shorten the duration of odor emissions. Dewatering would take place in the same location as the Proposed Project; therefore, potential odor impacts as a result of the Convair Lagoon Alternative are also expected to be less than significant due to the distance between the proposed dewatering pad areas from the nearest sensitive receptors. However, similar to the Proposed Project, this impact would remain a temporary significant and unavoidable impact because it is difficult to predict the nature and duration of odor emissions from decomposition.

Significance after Mitigation

Similar to the Proposed Project, Shipyard Sediment Site Project Mitigation Measure 10 would reduce the duration of odor impacts, but not to a less than significant level. This impact would be a temporarily significant and unavoidable.

6.5 Cumulative Impacts

Consistency with Applicable Air Quality Plans

The geographic context for the analysis of cumulative impacts relative to criteria air pollutants is the SDAB. The RAQS and SIP are intended to address cumulative impacts in the SDAB based on future growth predicted by SANDAG in the 2030 Regional Growth Forecast Update. SANDAG uses growth projections from the local jurisdictions' adopted general plans; therefore, development consistent with the applicable general plan would be generally consistent with the growth projections in the air quality plans. Cumulative development would generally not be expected to result in a significant impact in terms of conflicting with RAQS because the cumulative projects would be required to demonstrate that the proposed development is consistent with local planning documents. However, some projects would involve plan amendments that would exceed the growth assumptions in the planning document and RAQS. For example, the North Embarcadero Port Master Plan Amendment, listed in Table 5.7.3-1, Cumulative Projects in the Vicinity of the Convair Lagoon Alternative, is a Port Master Plan Amendment that proposes a variety of land uses changes. Therefore, cumulative development in the SDAB would have the potential to exceed the growth assumptions in the RAQS and result in a conflict with applicable air quality plans. The Convair Lagoon Alternative includes a PMPA amendment that would change the land uses over the 10-acre water portion of the site. However, the analysis of the PMPA, described above under Section 6.1, concluded that it would not exceed the SANDAG growth projections. Therefore, the Convair Lagoon Alternative would not result in a cumulatively considerable contribution to a potentially significant cumulative impact.

Consistency with Air Quality Standards

The geographic context for the analysis of cumulative impacts relative to criteria air pollutants is the SDAB. As noted within Section 4.4, the SDAB is designated as being in non-attainment for PM_{10}, $PM_{2.5}$, and ozone. Therefore, the baseline cumulative impact to the SDAB due to air pollution from stationary and mobile source emissions associated with basin-wide polluting activities is significant.

The San Diego Water Board does not have thresholds for air quality standards and therefore, thresholds from the City of San Diego were considered. The City of San Diego recommends applying the CAAQS as the significance threshold for cumulative impacts where accepted methodology exists. However, the City has no accepted methodology, nor has the District or the San Diego Water Board recommended a methodology for determining a project's impacts related to the CAAQS. However, the County of San Diego has adopted a methodology for addressing cumulative impacts in its Guidelines for Determining Significance – Air Quality, which will be used for this analysis. The County's cumulative impact methodology states that a project's construction emissions would be considered cumulatively considerable if the project would result in significant direct emissions of PM_{10}, $PM_{2.5}$, VOCs, or NO_x, or if the proposed project's emissions would combine with emissions from a nearby simultaneous construction project to exceed the direct impact significance thresholds for these pollutants. The significance thresholds for PM_{10}, $PM_{2.5}$, VOCs, and NO_x are listed in above in Table 4.

Based on the Localized Significance Thresholds (LST) established by the SCAQMD (SCAQMD 2009), NO_x emissions decrease approximately 95 percent beyond approximately 675 meters (2,195 feet). Therefore, cumulative projects 2,195 feet from Convair Lagoon are excluded from the cumulative NO_x analysis. According to the LSTs, $PM_{2.5}$ and PM_{10} decrease approximately 95 percent by 500 meters (1,625 feet). SCAQMD has not established an LST for VOCs. However, VOCs disperse quickly (California Indoor Air Quality 2011); therefore, it is assumed that VOC emissions would decrease by 95 percent beyond 500 meters, similar to PM_{10} and $PM_{2.5}$. Therefore, cumulative projects 1,625 feet from Convair Lagoon are excluded from the cumulative PM_{10}, $PM_{2.5}$, and VOC analysis. As a result, cumulative projects within 675 meters (2,195 feet) of Convair Lagoon are considered in the analysis of cumulative construction emissions. During operation, a project would result in a significant cumulative impact if it would conflict with the RAQS or SIP during operation, or exceed the significance thresholds listed in Table 4.

The projects that are located within 2,195 feet of the Convair Lagoon Site are the North Side - Airfield Project 5 and West Side - Ground Transportation Project 5 at the San Diego International Airport, the Teledyne Ryan Demolition Project, and the Sunroad Harbor Island Hotel. The cumulative projects would require the use of heavy construction equipment and truck trips throughout the duration of the construction that would result in emissions of NOx, VOCs, PM_{10}, and $PM_{2.5}$. The proposed Alternative's direct impact would exceed the significance threshold for NO_x during the sediment transport and placement phase. Therefore, the proposed Alternative, individually and in combination with the proposed cumulative projects, would result in cumulatively considerable NO_x emissions.

Two cumulative projects are located within 1,625 feet of the Convair Lagoon Site: the Teledyne Ryan Demolition Project and the Sunroad Harbor Island Hotel. As discussed in Section 6.2, none of the phases of Alternative construction would exceed the significance thresholds for PM_{10}, $PM_{2.5}$, or VOCs. However, due to the heavy equipment and truck trips that would be required at the cumulative project sites, if construction of either project would occur simultaneously with the Convair Lagoon Alternative, PM_{10}, $PM_{2.5}$, and VOC emissions in the area between the sites, where emissions from both projects would combine, would have the potential to exceed the significance thresholds for PM_{10}, $PM_{2.5}$, or VOCs and result in a significant cumulative impact.

Shipyard Sediment Site Mitigation Measures 1 through 9 and mitigation measure AQ-1 would reduce criteria pollutant emissions, but not to a level less than cumulatively considerable. Therefore, similar to the Proposed Project, the Convair Lagoon Alternative would result in a cumulatively considerable contribution to a significant cumulative construction impact related to emissions of PM_{10}, $PM_{2.5}$, VOC, and NO_x emissions.

As discussed in Section 6.2, operational emissions associated with the Convair Lagoon Alternative would be negligible and would not violate any air quality standard. Additionally, as discussed in Section 6.1, the proposed alternative would not conflict with the RAQS or the SIP. Therefore, the Convair Lagoon Alternative would comply with the applicable air quality standards and air quality plans. The potential air emissions associated with operation of the proposed alternative would not adversely impact the ability of the SDAB to meet the CAAQS and NAAQS. Therefore, the Convair Lagoon Alternative would not result in a cumulatively considerable operational contribution to the local cumulative impact area.

Sensitive Receptors

Carbon Monoxide Hotspots

The geographic context for the analysis of cumulative impacts relative to exposure of sensitive receptors to carbon monoxide hot spots would be the nearby intersections along Harbor Drive. The Convair Lagoon site and most of the cumulative projects would be located on or close to Harbor Drive. Therefore, cumulative project traffic would generally be concentrated on Harbor Drive. Implementation of the cumulative projects would have the potential to reduce intersection operations on Harbor Drive to an LOS D or worse. However, as discussed in Section 6.3, the Convair Lagoon Alternative would only result in a temporary increase in traffic on Harbor Drive and would not contribute to long-term carbon monoxide levels. Similar to the Proposed Project, the Convair Lagoon Alternative would not result in a cumulatively considerable contribution to cumulative impact related to carbon monoxide hot spots.

Toxic Air Contaminants

The cumulative projects in the Convair Lagoon vicinity include hotels and expansion of the Convention Center, which would require diesel truck trips to deliver supplies such as food for hotel restaurants. Expanded operational capacity at the airport may also result in an increase in truck trips. However, truck trips to hotel and convention center uses would be intermittent and would not substantially increase diesel particulate emissions. The airport improvements do include new gates, but generally consist of demolition of facilities and providing new access routes and parking facilities. These improvements would not substantially increase truck trips above existing conditions. Construction of the CDF and construction activities at the Shipyard Sediment Site would require diesel equipment and truck trips during construction only. A maximum of 100 daily truck trips would be required during construction at the Convair Lagoon and Shipyard Sediment Sites. However, construction emissions would be temporary and would not result in a long term increase in exposure to TAC emissions. Additionally, the HRA prepared for the Proposed Project determined that a temporary increase of 100 daily truck trips would not exceed the SDAPCD criterion for cancer or chronic or acute health risks. Therefore, a cumulative impact to sensitive receptors from diesel particulate emissions would not occur.

Stationary sources of TAC emissions identified in CARB's Air Quality and Land Use Handbook (2005) are freeways, rail yards, ports, refineries, dry cleaners, and large gas dispensing facilities. Projects at the San Diego International Airport include expansion of a utility plant and co-generation facility. Several cumulative projects would also increase operations in the District, including the Commercial Fisheries Revitalization Plan and Port Pavilion on Broadway Pier Project. Therefore, the cumulative projects would have the potential to result in an increase in TAC emissions and a potentially significant cumulative impact would occur. However, the Convair Lagoon Alternative would consist of an undeveloped, above-ground parcel of land. It would not result in a new source of stationary TAC emissions. Therefore, the Convair Lagoon Alternative would not result in a cumulatively considerable contribution to a significant cumulative impact.

Objectionable Odors

Similar to the Proposed Project, odors resulting from the treatment of decomposing sediments under the proposed Alternative could result in temporary odor impacts. However, impacts relative to objectionable odors are limited to the area immediately surrounding the odor source and are not cumulative in nature because the air emissions that cause odors disperse beyond their source. As the emissions disperse, the odor becomes less and less detectable. Additionally, as discussed above in Section 6.4, following construction the CDF would consist of undeveloped land and would not result in a source of odors. None of the proposed cumulative projects propose development that is a typical source of odor complaints. Therefore, the Convair Lagoon Alternative, in combination with other cumulative projects, would not result in a cumulatively significant impact associated with objectionable odors.

6.6 Mitigation Measures

Mitigation Measures 1 through 10 identified for the Shipyard Sediment Site Project would also be implemented under the Convair Lagoon Alternative to reduce nitrogen oxide emissions and shorten the duration of exposure to odors. Additionally, mitigation measure AQ-1 would be implemented to reduce nitrogen oxide emissions during Phase 4 of Alternative construction.

AQ-1 **Prohibit Tug Boat Idling**. The applicant responsible for the tug boat operation shall ensure that tug boats not be allowed to idle during any barge loading and unloading activities. Tug boat engines shall be shut off once the barge is in place for sediment loading and unloading.

6.7 Level of Significance After Mitigation

Implementation of Mitigation Measures 1 though 10 and Mitigation Measure AQ-1 would reduce temporary impacts related to nitrogen oxide emissions and odors during Phase 4 of Alternative construction, but not to a less than significant level. These temporary impacts would be significant and unavoidable.

7.0 Conclusions

7.1 Construction

Construction of the Convair Lagoon Alternative would not conflict with or obstruct implementation of the RAQS or SIP or expose sensitive receptors to substantial pollutant concentrations. With the exception of transport of sediment from the Shipyard Sediment Site to the CDF, no construction activities would exceed the significance thresholds for criteria pollutants. Phase 4 of the Alternative, which would include transport and placement activities at the CDF and construction activities at the Shipyard Sediment Site, would exceed the significance threshold for nitrogen oxides. Implementation of Shipyard Sediment Site Mitigation Measures 1 though 9 and Mitigation Measure AQ-1 would reduce nitrogen oxide emissions, but not to below the significance threshold. Dewatering activities would have the potential to expose nearby sensitive receptors to objectionable odors. Mitigation Measure 10 identified for the Shipyard Sediment Site Project would reduce impacts, but not to a less than significant level.

7.2 Operation

Following construction, the CDF would consist of an undeveloped, above-ground parcel of land. It would not conflict with or obstruct implementation of the RAQS or SIP, violate any air quality standard, expose sensitive receptors to substantial pollutant concentrations, generate odors, or result in a cumulatively considerable net increase in emissions of a criteria pollutant. All impacts would be less than significant.

8.0 References

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Air Quality Data

5/27/2011 05:21:56 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\22242\Desktop\Shipyard\Shipyard 05 27 11.urb924

Project Name: Shipyard

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	18.87	194.99	88.91	0.31	20.38	8.19	26.40	4.30	7.53	9.83	36,726.38
2014 TOTALS (lbs/day unmitigated)	3.86	35.32	27.08	0.05	0.19	1.74	1.93	0.07	1.60	1.66	7,209.77

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/1/2013-1/31/2013 Active Days: 23	4.67	38.41	19.36	0.00	0.57	1.66	2.22	0.12	1.52	1.64	5,529.18
Demolition 01/01/2013-02/28/2013	4.67	38.41	19.36	0.00	0.57	1.66	2.22	0.12	1.52	1.64	5,529.18
Fugitive Dust	0.00	0.00	0.00	0.00	0.56	0.00	0.56	0.12	0.00	0.12	0.00
Demo Off Road Diesel	4.63	38.34	18.05	0.00	0.00	1.65	1.65	0.00	1.52	1.52	5,375.79
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.04	0.07	1.31	0.00	0.01	0.00	0.01	0.00	0.00	0.01	153.39
Time Slice 2/1/2013-2/28/2013 Active Days: 20	15.78	158.32	72.12	0.09	20.38	6.02	26.40	4.30	5.53	9.83	24,116.27
Building 02/01/2013-05/31/2013	3.81	27.89	22.47	0.03	0.13	1.38	1.51	0.04	1.26	1.31	5,299.49
Building Off Road Diesel	2.72	15.81	9.50	0.00	0.00	0.91	0.91	0.00	0.83	0.83	1,881.67

Building Vendor Trips	0.98	11.89	9.38	0.03	0.11	0.46	0.57	0.04	0.42	0.46	2,996.67
Building Worker Trips	0.11	0.19	3.60	0.00	0.02	0.01	0.03	0.01	0.01	0.02	421.15
Demolition 01/01/2013-02/28/2013	4.67	38.41	19.36	0.00	0.57	1.66	2.22	0.12	1.52	1.64	5,529.18
Fugitive Dust	0.00	0.00	0.00	0.00	0.56	0.00	0.56	0.12	0.00	0.12	0.00
Demo Off Road Diesel	4.63	38.34	18.05	0.00	0.00	1.65	1.65	0.00	1.52	1.52	5,375.79
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.04	0.07	1.31	0.00	0.01	0.00	0.01	0.00	0.00	0.01	153.39
Fine Grading 02/01/2013-05/31/2013	7.30	92.02	30.28	0.06	19.69	2.99	22.67	4.14	2.75	6.88	13,287.61
Fine Grading Dust	0.00	0.00	0.00	0.00	19.48	0.00	19.48	4.07	0.00	4.07	0.00
Fine Grading Off Road Diesel	5.08	61.29	18.82	0.00	0.00	1.84	1.84	0.00	1.69	1.69	7,236.49
Fine Grading On Road Diesel	2.20	30.70	10.80	0.06	0.21	1.14	1.35	0.07	1.05	1.12	5,974.42
Fine Grading Worker Trips	0.02	0.03	0.66	0.00	0.00	0.00	0.01	0.00	0.00	0.00	76.69
Time Slice 3/1/2013-4/1/2013 Active Days: 22	11.11	119.91	52.76	0.09	19.82	4.36	24.18	4.18	4.01	8.19	18,587.10
Building 02/01/2013-05/31/2013	3.81	27.89	22.47	0.03	0.13	1.38	1.51	0.04	1.26	1.31	5,299.49
Building Off Road Diesel	2.72	15.81	9.50	0.00	0.00	0.91	0.91	0.00	0.83	0.83	1,881.67
Building Vendor Trips	0.98	11.89	9.38	0.03	0.11	0.46	0.57	0.04	0.42	0.46	2,996.67
Building Worker Trips	0.11	0.19	3.60	0.00	0.02	0.01	0.03	0.01	0.01	0.02	421.15
Fine Grading 02/01/2013-05/31/2013	7.30	92.02	30.28	0.06	19.69	2.99	22.67	4.14	2.75	6.88	13,287.61
Fine Grading Dust	0.00	0.00	0.00	0.00	19.48	0.00	19.48	4.07	0.00	4.07	0.00
Fine Grading Off Road Diesel	5.08	61.29	18.82	0.00	0.00	1.84	1.84	0.00	1.69	1.69	7,236.49
Fine Grading On Road Diesel	2.20	30.70	10.80	0.06	0.21	1.14	1.35	0.07	1.05	1.12	5,974.42
Fine Grading Worker Trips	0.02	0.03	0.66	0.00	0.00	0.00	0.01	0.00	0.00	0.00	76.69
Time Slice 4/2/2013-5/31/2013 Active Days: 44	15.11	150.39	76.14	0.12	19.96	5.84	25.80	4.23	5.36	9.60	24,389.83
Building 02/01/2013-05/31/2013	3.81	27.89	22.47	0.03	0.13	1.38	1.51	0.04	1.26	1.31	5,299.49
Building Off Road Diesel	2.72	15.81	9.50	0.00	0.00	0.91	0.91	0.00	0.83	0.83	1,881.67

Building Vendor Trips	0.98	11.89	9.38	0.03	0.11	0.46	0.57	0.04	0.42	0.46	2,996.67
Building Worker Trips	0.11	0.19	3.60	0.00	0.02	0.01	0.03	0.01	0.01	0.02	421.15
Building 04/02/2013-05/31/2013	3.81	27.89	22.47	0.03	0.13	1.38	1.51	0.04	1.26	1.31	5,299.49
Building Off Road Diesel	2.72	15.81	9.50	0.00	0.00	0.91	0.91	0.00	0.83	0.83	1,881.67
Building Vendor Trips	0.98	11.89	9.38	0.03	0.11	0.46	0.57	0.04	0.42	0.46	2,996.67
Building Worker Trips	0.11	0.19	3.60	0.00	0.02	0.01	0.03	0.01	0.01	0.02	421.15
Fine Grading 02/01/2013-05/31/2013	7.30	92.02	30.28	0.06	19.69	2.99	22.67	4.14	2.75	6.88	13,287.61
Fine Grading Dust	0.00	0.00	0.00	0.00	19.48	0.00	19.48	4.07	0.00	4.07	0.00
Fine Grading Off Road Diesel	5.08	61.29	18.82	0.00	0.00	1.84	1.84	0.00	1.69	1.69	7,236.49
Fine Grading On Road Diesel	2.20	30.70	10.80	0.06	0.21	1.14	1.35	0.07	1.05	1.12	5,974.42
Fine Grading Worker Trips	0.02	0.03	0.66	0.00	0.00	0.00	0.01	0.00	0.00	0.00	76.69
Fine Grading 04/02/2013-05/31/2013	0.19	2.59	0.91	0.00	0.02	0.10	0.11	0.01	0.09	0.09	503.25
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.19	2.59	0.91	0.00	0.02	0.10	0.11	0.01	0.09	0.09	503.25
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 6/3/2013-11/29/2013 Active Days: 130	**18.87**	**194.99**	**88.91**	**0.31**	1.18	**8.19**	9.37	0.39	**7.53**	7.92	**36,726.38**
Building 06/03/2013-11/29/2013	7.81	40.39	34.50	0.03	0.13	2.43	2.55	0.04	2.23	2.27	6,634.56
Building Off Road Diesel	6.72	28.30	21.52	0.00	0.00	1.95	1.95	0.00	1.80	1.80	3,216.75
Building Vendor Trips	0.98	11.89	9.38	0.03	0.11	0.46	0.57	0.04	0.42	0.46	2,996.67
Building Worker Trips	0.11	0.19	3.60	0.00	0.02	0.01	0.03	0.01	0.01	0.02	421.15
Fine Grading 06/03/2013-11/29/2013	11.06	154.61	54.41	0.28	1.05	5.76	6.82	0.35	5.30	5.65	30,091.82
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	11.06	154.61	54.41	0.28	1.05	5.76	6.82	0.35	5.30	5.65	30,091.82

Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 12/2/2013-12/31/2013 Active Days: 22	4.18	39.02	28.46	0.05	0.19	1.98	2.17	0.07	1.82	1.88	7,209.46
Building 12/02/2013-03/31/2014	3.50	29.57	25.14	0.03	0.13	1.63	1.76	0.04	1.49	1.54	5,370.61
Building Off Road Diesel	2.41	17.49	12.16	0.00	0.00	1.15	1.15	0.00	1.06	1.06	1,952.80
Building Vendor Trips	0.98	11.89	9.38	0.03	0.11	0.46	0.57	0.04	0.42	0.46	2,996.67
Building Worker Trips	0.11	0.19	3.60	0.00	0.02	0.01	0.03	0.01	0.01	0.02	421.15
Fine Grading 12/02/2013-03/31/2014	0.68	9.45	3.32	0.02	0.06	0.35	0.42	0.02	0.32	0.35	1,838.85
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.68	9.45	3.32	0.02	0.06	0.35	0.42	0.02	0.32	0.35	1,838.85
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 1/1/2014-3/31/2014 Active Days: 64	3.86	35.32	27.08	0.05	0.19	1.74	1.93	0.07	1.60	1.66	7,209.77
Building 12/02/2013-03/31/2014	3.25	27.02	24.10	0.03	0.13	1.43	1.56	0.04	1.32	1.36	5,370.92
Building Off Road Diesel	2.25	16.38	12.11	0.00	0.00	1.02	1.02	0.00	0.94	0.94	1,952.80
Building Vendor Trips	0.89	10.47	8.67	0.03	0.11	0.41	0.51	0.04	0.37	0.41	2,996.84
Building Worker Trips	0.10	0.17	3.33	0.00	0.02	0.01	0.03	0.01	0.01	0.02	421.28
Fine Grading 12/02/2013-03/31/2014	0.61	8.30	2.97	0.02	0.06	0.31	0.37	0.02	0.28	0.30	1,838.85
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.61	8.30	2.97	0.02	0.06	0.31	0.37	0.02	0.28	0.30	1,838.85
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Time Slice 4/1/2014-4/29/2014 Active Days: 21	3.48	14.86	10.50	0.01	0.03	1.12	1.15	0.01	1.03	1.04	1,904.84
Asphalt 04/01/2014-04/29/2014	3.48	14.86	10.50	0.01	0.03	1.12	1.15	0.01	1.03	1.04	1,904.84
Paving Off-Gas	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.99	12.21	7.96	0.00	0.00	1.02	1.02	0.00	0.94	0.94	1,131.92

Paving On Road Diesel	0.19	2.56	0.92	0.01	0.02	0.09	0.11	0.01	0.09	0.09	568.34
Paving Worker Trips	0.05	0.08	1.62	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.58

Phase Assumptions

Phase: Demolition 1/1/2013 - 2/28/2013 - Demolition of existing lagoon features

Building Volume Total (cubic feet): 0

Building Volume Daily (cubic feet): 0

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Crushing/Processing Equip (142 hp) operating at a 0.78 load factor for 8 hours per day

2 Excavators (350 hp) operating at a 0.57 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (300 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Fine Grading 2/1/2013 - 5/31/2013 - Dredging for jetty construction and import of material for construction

Total Acres Disturbed: 2.27

Maximum Daily Acreage Disturbed: 0.03

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 162.5 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 1483.96

Off-Road Equipment:

1 Cranes (1200 hp) operating at a 0.5 load factor for 8 hours per day

2 Generator Sets (570 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Fine Grading 4/2/2013 - 5/31/2013 - Dredging for storm drains

Total Acres Disturbed: 0

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 125

Off-Road Equipment:

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Phase: Fine Grading 6/3/2013 - 11/29/2013 - Export of Dredged sediment to Kettleman

Total Acres Disturbed: 0

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 7474.35

Off-Road Equipment:

Phase: Fine Grading 12/2/2013 - 3/31/2014 - Used to estimate import for cap. Equipment list is split between this and the construction phase.

Total Acres Disturbed: 0

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 456.74

Off-Road Equipment:

Phase: Paving 4/1/2014 - 4/29/2014 - Type Your Description Here

Acres to be Paved: 10

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 2/1/2013 - 5/31/2013 - Construction of Jetty

Off-Road Equipment:

2 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Pumps (50 hp) operating at a 0.6 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

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Phase: Building Construction 4/2/2013 - 5/31/2013 - Construction of storm drain extensions

Off-Road Equipment:

2 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Pumps (50 hp) operating at a 0.6 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 6/3/2013 - 11/29/2013 - Placement of fill

Off-Road Equipment:

2 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

8 Pumps (50 hp) operating at a 0.6 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 12/2/2013 - 3/31/2014 - Construction of cap

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Unmitigated Emmissions

Construction Phase	Hours/Day	Number of Boats	CO		VOC		NOx		SOx		PM10		PM2.5	
			Emissions Factor (lbs/hour)	Emissions (lbs/day)	Emissions Factor (lbs/hour)	Emissions (lbs/day)	Emissions Factor (lbs/hour)	Emissions (lbs/day)	Emissions Factor (lbs/hour)	Emissions (lbs/day)	Emissions Factor (lbs/hour)	Emissions (lbs/day)	Emissions Factor (lbs/hour)	Emissions (lbs/day)
Installation of Jetty	8	1	1.899	15.192	0.413	3.304	10.141	81.128	0.158	1.264	0.326	2.608	0.3	2.4
Transport of Sediment	8	4	1.899	60.768	0.413	13.216	10.141	324.512	0.158	5.056	0.326	10.432	0.3	9.6

*All based on a 1,650 HP tug boat

Sediment Transport With Implementation of Mitigation Measure AQ-1

Construction Phase	Hours/Day	Number of Boats	CO		VOC		NOx		SOx		PM10		PM2.5	
			Emissions Factor (lbs/hour)	Emissions (lbs/day)	Emissions Factor (lbs/hour)	Emissions (lbs/day)	Emissions Factor (lbs/hour)	Emissions (lbs/day)	Emissions Factor (lbs/hour)	Emissions (lbs/day)	Emissions Factor (lbs/hour)	Emissions (lbs/day)	Emissions Factor (lbs/hour)	Emissions (lbs/day)
Transport of Sediment	4	4	1.899	30.384	0.413	6.608	10.141	162.256	0.158	2.528	0.326	5.216	0.3	4.8

APPENDIX J

SHIPYARD SEDIMENT ALTERNATIVES ANALYSIS CONVAIR LAGOON CONFINED DISPOSAL FACILITY ALTERNATIVE MARINE BIOLOGICAL RESOURCES TECHNICAL REPORT

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FINAL
SHIPYARD SEDIMENT ALTERNATIVES ANALYSIS
CONVAIR LAGOON CONFINED DISPOSAL FACILITY ALTERNATIVE
MARINE BIOLOGICAL RESOURCES TECHNICAL REPORT

REPORT 1 OF 2:
CONVAIR LAGOON EXISTING CONDITIONS AND IMPACT ANALYSIS

Prepared for:

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Attn: Wentzelee Botha

Prepared by:

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Fax: (858) 560-7779

May 31, 2011

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Report 1 of 2
Convair Lagoon Existing Conditions and Impact Analysis

INTRODUCTION

Brown and Winters has contracted Merkel & Associates, Inc. (M&A) to conduct an assessment of marine biological resources for a proposed confined disposal facility (CDF) at Convair Lagoon, located in north San Diego Bay, California (Figure 1). Convair Lagoon is a shallow embayment that was the site of a polychlorinated biphenyl (PCB) remedial action that included the construction of sediment cap that was completed in 1997. In addition, an eelgrass mitigation program was implemented in 1997 and completed in 2003, and included the creation of 4.15 acres (1.68 hectares [ha]) of eelgrass habitat (TDY 2003).

PROPOSED ALTERNATIVE

From a conceptual standpoint, the proposed project consists of the placement of dredge fill material generated from the Shipyard Sediment Project into a CDF constructed in Convair Lagoon. Presently the lagoon is open to San Diego Bay. Therefore, the facility will be confined with the construction of a rock jetty (containment barrier). The barrier will extend the general trend of the shorelines of the adjacent Rental Car Parking and Services and Coast Guard facilities (Figure 2). The barrier will serve to contain the dredge fill material during earthwork filling operations and provide a sediment barrier to mitigate the migration of contaminated dredge fill material into the bay. The barrier would extend an estimated 1,100 feet (ft) (335 meters [m]) from the southwest corner to the southeast corner of the lagoon. Fill material will be placed within the CDF to an approximate elevation of 12 ft (3.7 m) above mean lower level water (MLLW). When complete, the relatively level pad will consist of up to approximately 20 ft (6.1 m) of new fill material. The upper approximately 3 ft (0.9 m) may consist of clean, compacted, import fill material; whereas the underlying material will consist of contaminated dredge fill. A portion of the dredge fill will remain saturated beneath sea level. Construction of the Convair Lagoon Alternative would consist of four phases: 1) Site Preparation; 2) Jetty Construction; 3) Sediment Transport and Placement; and 4) Containment Cap Installation. These construction phases are described in detail below.

PHASE 1 - SITE PREPARATION

Phase 1 construction would involve initial site preparation activities. This phase of construction would include the demolition of existing unsubmerged facilities on the site, including the sea plane marine ramp and pier. This phase of construction would also include extending the existing storm drains onsite to an area beyond the proposed jetty. Each of the extended storm drains would include an energy dissipater at the mouth of the storm drain. The extension of these storm drains would require: 1) the minor over excavation of soils in the storm drain extension area within the existing sand cap; 2) the installation of compacted gravel or alternative bedding material for stabilization purposes; 3) the installation of the pipeline extension; and 4) the installation of rip-rap energy dissipaters.

Figure 1. Vicinity Map, San Diego Bay, CA.

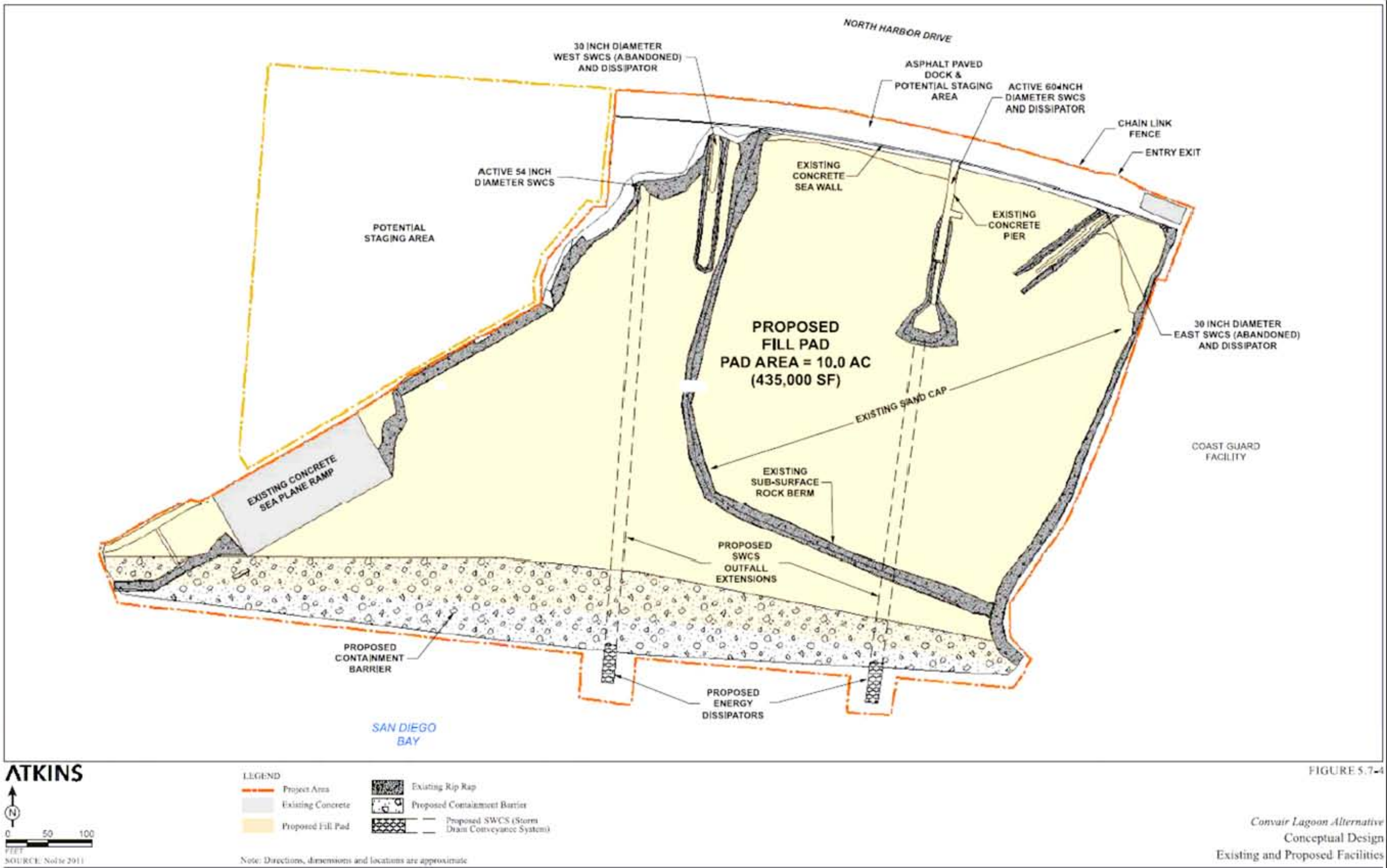

Figure 2. Convair Lagoon Confined Disposal Facility (Conceptual), San Diego Bay.

Removal of sediment underneath the containment barrier may be needed before barrier construction. For structural purposes, material is to be excavated within the footprint of the barrier prior to construction, with excavation to depths of approximately 3 ft (0.9 m). Based on the assumed excavation depth, an estimated volume for excavated material prior to confinement barrier placement is approximately 13,000 cubic yards (cy). Excavated material may be considered for reuse as fill material in the containment area. The excavated material would potentially be removed with appropriate dredging equipment and transported hydraulically or by crane and clamshell from the adjacent shoreline. The excavated material would either be stockpiled in staging areas or placed as fill, likely in shallow water portions of the project. If the removed material is characterized as unsuitable and non-reusable it would potentially need to be transported to an off-site disposal facility.

Phase 2 - Jetty Construction

A rock jetty would be constructed to serve as a containment barrier during fill placement and provide an engineered shoreline. The barrier would also serve as a filter to reduce migration of contaminated sediment during and after placement. For the purposes of this report, a crest elevation of 12 ft (3.7 m) MLLW has been assumed, which generally matches that of surrounding parcels. For planning purposes, the containment barrier has been assumed to a have a slope gradient of 2:1 (horizontal:vertical) and a crest width of approximately 10 ft (3.0 m). The barrier may comprise of different layers and import rock materials. Specifically, three layers would be placed upon an excavated surface below the marine floor. The core of the containment jetty would consist of quarry-run aggregate or similar material. An under layer consisting of small rock would support an armor layer. An armor rock layer would protect the outside of the barrier from wave action, boat wakes and other erosional forces. It is expected that the rock and aggregate material composing of the containment jetty would be imported from a nearby quarry. A filter (e.g., geotextile filter fabric or graded rock) would be constructed inside the face of the containment barrier to mitigate migration of fill particles into the bay due to tidal fluctuations.

Phase 3 - Sediment Transport and Placement

Phase 3 construction would involve the transport and placement of the contaminated marine sediment dredged from the Shipyard Sediment Site Project to the Convair Lagoon Alternative site. During this phase of construction, 158,000 cy of dredged contaminated marine sediment from the Shipyard Sediment Site Project would be transported to the Convair Lagoon Alternative site via barges and placed within the submerged areas of the lagoon as hydraulic fill. The contaminated marine sediment would be transported via a barge towed by a tug boat from the shipyard area to the Convair Lagoon Alternative site. Assuming the sediment will be placed in the CDF by hydraulic methods, the dredge fill material would be transferred from barges into the CDF through the use of pumps, pipelines and hoses. Barges used to dredge the sediment potentially have the capability of transporting the dredge material to the site and performing the hydraulic fill operations. Due to the nature of hydraulic fill methods, there is a potential of sediment segregation during placement, as granular material falls out of suspension near the dredging inlet, while fine material remains in suspension. The degree of segregation will depend in part on the selection of the dredge effluent outlet. The influent rate of dredge fill material would be approximately equal to the effluent rate of discharged water through the containment barrier and, if designed, a weir. The discharged water will need to meet effluent quality standards in terms of suspended solids or turbidity, and other constituents defined by water quality protection standards.

PHASE 4 - CONTAINMENT CAP INSTALLATION

Phase 4 construction would involve the importation and installation of a 3-ft (0.9 m) thick sand layer containment cap. During this phase of construction, 41,000 cy of sand would be imported to the site and placed above the contaminated sediment by unloading the sand directly from the trucks. A grader would be used to move the sand such that the cap would have a level surface. The sand containment cap would prevent any hazardous materials from entering the environment. Upon completion of the containment cap, the elevation of the entire site would be at-grade with the existing land, or approximately 12 ft (3.7 m) MLLW.

POST-CONSTRUCTION OPERATION

The Convair Lagoon Alternative does not include the construction or development of any buildings or structures on the converted site and no dewatering would be required. Monitoring of the site would continue to detect any release of hazardous materials from the contaminated marine sediment. Contamination monitoring would be performed in compliance with the Regional Water Quality Control Board standards.

MITIGATION

The project proposes to mitigate for eelgrass impacts by creating eelgrass habitat at one or more locations within San Diego Bay by raising the bayfloor elevation with dredged materials and planting eelgrass on the elevated plateau. Several locations being considered include the former NTC channel, Harbor Island – West Basin, adjacent to Convair Lagoon, A-8 Anchorage, South Bay Borrow Site, Emory Cove Channel, South Bay Power Plant Channel, and South Bay Power Plant. To mitigate for the loss of intertidal and subtidal habitat, as well as, bay coverage, three possible locations are being evaluated: Grand Caribe Isle in the Coronado Cays, D Street Fill just across the Sweetwater Channel from the National City Marine Terminal, the South Bay Power Plant, the Salt Works, and Pond 20 adjacent to the Salt Works. These sites would be lowered from upland elevations to create intertidal and subtidal habitats. The mitigation sites are discussed in a separate report (Report 2).

EXISTING SITE CONDITIONS WITHIN THE CONVAIR LAGOON PROJECT AREA

Existing conditions information is based on a recent habitat survey conducted by M&A on March 29, 2011, as well as, a literature review for specific resources such as fish (Pondella and Williams 2009), avian species (Tierra Data Incorporated 2009), with supplemental information garnered from the San Diego Bay Integrated Natural Resources Management Plan (INRMP) (Navy and SDUPD 2010) and Comprehensive Conservation Plan and Environmental Impact Statement for Sweetwater Marsh and South San Diego Bay Units, San Diego National Wildlife Refuge (USFWS 2006) .

The Convair Lagoon project area occurs near the border of the north and north-central ecoregion (Navy and SDUPD 2010) and is located along the northern shoreline of San Diego Bay. Four general types of habitats described in the INRMP occur in the project area:

- Disturbed Upland (>+7.79 ft MLLW)
- Intertidal (+7.79 to -2 ft MLLW)
- Shallow Subtidal (-2 to -12 ft MLLW)
- Moderately Deep and Deep Subtidal (below -12 ft MLLW)

Within these habitat types, various categories may also be present, and examples include marsh habitat within the intertidal zone, vegetated and non-vegetated habitat, as well as, artificial hard substrate (e.g., rip-rap revetment, concrete bulkhead wall). Table 1 summarizes the extent of the various habitat types present within the project area.

Table 1. Habitat Types within the Proposed Convair Lagoon Project Footprint.

Habitat Type	Acres	Hectares
Upland (>+7.8 ft MLLW)		
Urban Disturbed (Man-Modified)	0.64	0.26
Disturbed Upland	0.46	0.19
Intertidal (+7.8 to -2 ft MLLW)		
Intertidal Beach (+7.8 to +2.3 ft MLLW)	0.83	0.34
Coastal Salt Marsh (+7.8 to +2.3 ft MLLW)	0.11	0.04
Intertidal Flats (+2.3 to 0 ft MLLW)	1.65	0.67
Lower Intertidal (0 to -2 ft MLLW)	1.42	0.58
Man Modified	1.12	0.45
Total (Non Man Modified)	4.01	1.63
Shallow Subtidal (-2 to -12 ft MLLW)		
Man Modified	0.19	0.08
Total (Non Man Modified)	4.49	1.82
Total Non-Man-Modified Habitat (Intertidal and Subtidal)	8.50	3.45
Moderately Deep and Deep Subtidal (below -12 ft MLLW)	0.31	0.13
Jurisdictional Waters (<+7.8 ft MLLW)	9.85	3.99
Eelgrass - In Project Footprint*	5.64	2.28
Eelgrass - Adjacent to Project Footprint	0.37	0.15
Eelgrass - Total*	6.01	2.43

*Eelgrass occurs in both the lower intertidal and shallow subtidal habitats.

UPLANDS

On those lands located adjacent to San Diego Bay, upland habitat generally occurs above the areas influenced by tidal action, or above +7.8 ft MLLW. The majority of the native upland habitats that once occurred around San Diego Bay have long since been replaced by development (USFWS 2006). The upland habitat in the vicinity of Convair Lagoon consists of man-modified features, such paved surfaces, concrete debris, and rip-rap revetment, accounting for approximately 0.64 acres (0.26 hectares [ha]) (Figure 3). Undeveloped uplands around Convair Lagoon consist primarily of nonnative grasslands and disturbed, weedy areas, and account for approximately 0.46 acres (0.19 ha) in the project area (Table 1).

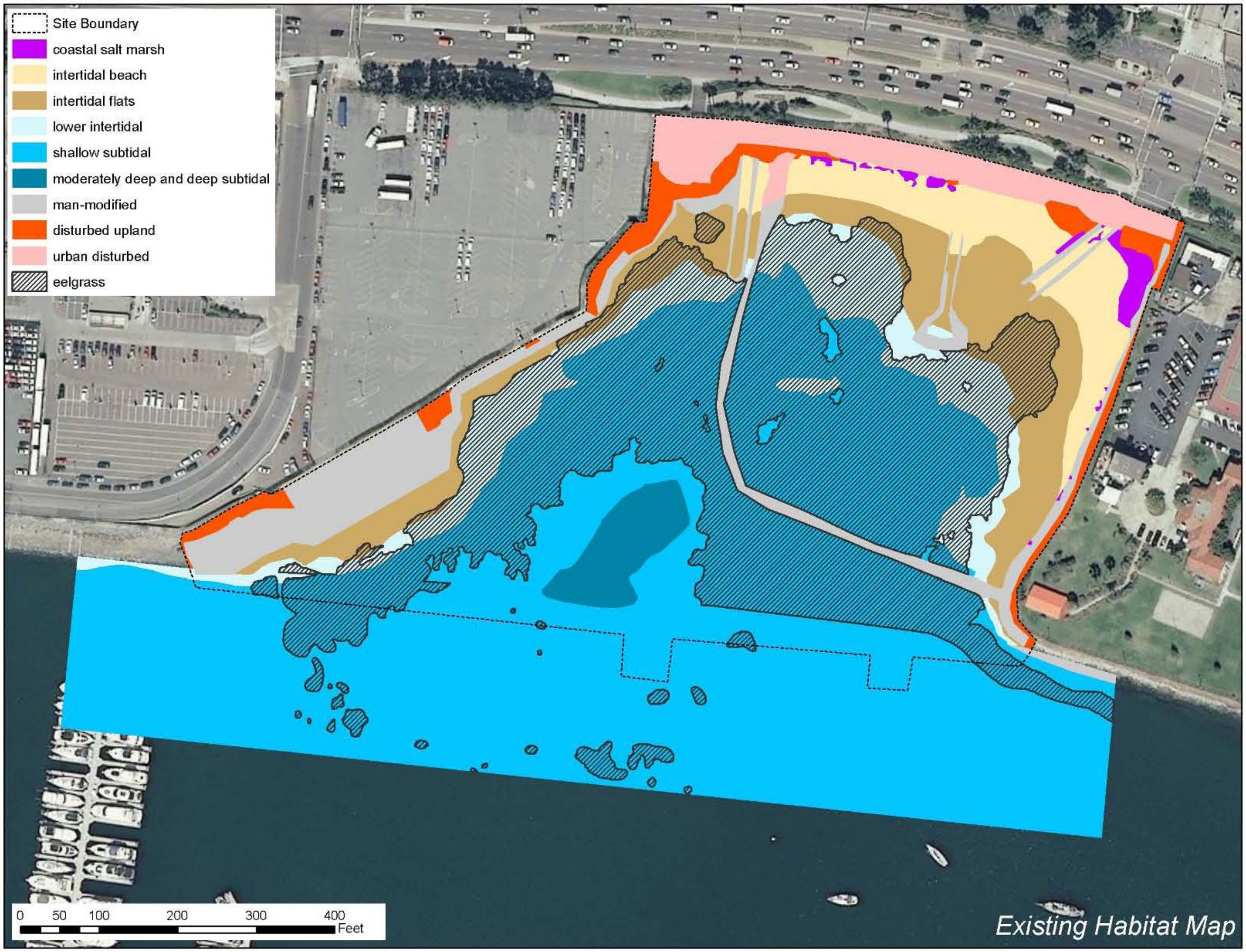

Figure 3. Habitats in the Vicinity of Convair Lagoon, San Diego Bay.

Coastal Salt Marsh

Coastal salt marsh is composed of salt tolerant vegetation and occurs in the upper intertidal zone above the intertidal mudflats (> +2.3 ft MLLW). It is within the range of regular (daily) to irregular (less than daily) tidal inundation and is exposed more than inundated. The region's semi-arid Mediterranean climate yields only limited rainfall; therefore tidal circulation is the most important water source for this habitat. The tides also carry necessary nutrients into this habitat, and in San Diego Bay, coastal salt marsh habitat occurs between approximately +2.3 to +7.8 ft MLLW (Navy and SDUPD 2010).

In the project area, approximately 0.11 acres (0.04 ha) of coastal salt marsh habitat is present (Table 1), represented by pickleweed (*Salicornia* spp.), saltbush (*Atriplex semibaccata*), and salt grass (*Distichlis spicata*), as well as, numerous weedy species characteristic of disturbed habitat. The majority is present in northeastern portion of the project area, with small patches present along the northern, and to a lesser extent, the eastern fringe of the project area (Figure 3). The remaining upper intertidal area is unvegetated beach habitat, and accounts for approximately 0.83 acres (0.34 ha) within the project area (Table 1).

Intertidal Flats

Intertidal flats in the project area include mudflats and sand flats between +2.3 to 0 ft MLLW, and can consist of various combinations of clay, silt, sand, shell fragments, and organic debris. The water levels on the flats are determined by the daily tidal cycles, which submerge or expose the surface approximately twice per day. These mudflats contain abundant organic matter and microorganisms, but not at the level found in eelgrass beds or salt marsh habitat (USFWS 2006). Although generally thought of as unvegetated, mudflats often contain areas of microorganisms, including diatoms and blue-green algae, which provide food for various species of worms and other invertebrates. Seasonal growth of macroalgae, such as *Enteromorpha* sp., *Cladophora* sp., and sea lettuce (Ulva sp.), can also occur. The invertebrates found on these mudflats include organisms that feed on detritus and algae, as well as snails, crabs, and polychaete worms, that glean food from the mud substrate or capture prey in the shallow water. Approximately 1.65 acres (0.67 ha) of intertidal flats are present in the project area (Table 1 and Figure 3).

Lower Intertidal Zone

The lower intertidal zone (0 to -2 ft MLLW) is generally inundated for the majority of the day, and is only exposed during periods of extreme low tides. The substrate is similar to the intertidal flats, and is considered the upper limit for eelgrass (*Zostera marina*) beds within San Diego Bay (Navy and SDUPD 2010). In the project area, approximately 1.42 acres (0.58 ha) of lower intertidal habitat is present, some of which supports eelgrass (Figure 3)

Shallow Subtidal

The majority of the open waters in the project area are classified as shallow subtidal habitat. This habitat is defined as continually submerged, shallow water habitat that extends from -2 to -12 ft MLLW. In San Diego Bay, shallow subtidal habitat supports an abundance of fish, and bird abundance and diversity is higher in this habitat than in any other subtidal habitats in the bay possibly due to the higher abundance of fish (Navy and SDUPD 2010).

Eelgrass

Eelgrass vegetated habitats are an essential component of southern California's coastal marine environment. Eelgrass beds function as important habitat for a variety of invertebrate, fish, and avian species. For many species, eelgrass beds are an essential biological habitat component for at least a portion of their life cycle, providing resting and feeding sites along the Pacific Flyway for avian species, and nursery sites for numerous species of fish (Navy and SDUPD 2010).

The Southern California Eelgrass Mitigation Policy (SCEMP, Revision 11; NMFS 1991), a policy developed by the Federal and State resource agencies (National Marine Fisheries Service [NMFS], U.S. Army Corps of Engineers [ACOE], U.S. Fish and Wildlife Service (USFWS], and California Department of Fish and Game [CDFG]), offers specific guidelines for appropriate responses and mitigation measures for activities that threaten eelgrass vegetated habitats. As dictated by the SCEMP (see Appendix A), pre- and post-construction surveys are required within 30 days of project commencement and completion, and will be used to determine any potential mitigation. The SCEMP requires that impacts to eelgrass be mitigated by restoration at a 1.2:1 area ratio (NMFS 1991).

Extensive eelgrass beds are present and extend from +1 ft to -12 ft (+0.3 m to -3.7 m) MLLW with a coverage of approximately 5.64 acres (2.28 ha) in the project footprint (Figure 3 and Table 1). In addition, eelgrass is present outside of the direct project footprint, with an approximate coverage of 0.37 acres (0.15 ha).

Unvegetated Soft-Bottom Habitat

Where bare mud occurs, few invertebrates were observed although evidence of burrowing invertebrates, possibly tube dwelling anemones, arthropods (e.g., ghost shrimp, *Callianassa*), or bivalves, were observed. Although only round stingray (*Urobattus halleri*) were observed, other fish species including barred and spotted sand bass (*Paralabrax nebulifer* and *P. maculatofasciatus*), and midshipman (*Porichthys myriaster*) are likely to use this habitat.

MODERATELY DEEP SUBTIDAL

Moderately deep subtidal habitat occurs between the depths of -12 ft to -20 ft MLLW. The habitat extends from the approximate lower depth of most eelgrass to the approximate edge of the shipping channel. It represents areas that generally have been dredged in the past but are not maintained as navigational channels. In the project area, approximately 0.31 acres (0.13 ha) of moderately deep subtidal habitat is present (Table 1 and Figure 3).

ARTIFICIAL STRUCTURES

Man-made habitat consisting of rip-rap revetment extends along the entire eastern shoreline, while a mixture of rip-rap revetment, concrete bulkhead walls, as well as, a boat launch ramp extends along the entire western shoreline (Figure 3). The northern shoreline is a mixture of rip-rap revetment, a small pier structure, and several pocket beaches. Further offshore in water depths of approximately -5 ft (-1.5 m) MLLW, subtidal rip-rap delineates the perimeter of the remedial sediment cap, with several navigational hazard warning piles installed (Figure 3). The sediments consist of fine-grained sand in the intertidal zone and within the remedial cap, with sand and bay muds present beyond the perimeter of the remedial cap.

Within the intertidal zone, barnacles (*Chthamalus* spp., *Balanus* sp.) were the most common invertebrates on the bulkhead walls or rip-rap. While limited algal growth was observed during the survey (e.g., *Ulva* spp, foliose red algae.), some common algae found attached to hard structures include *Corallina pinnatifolia*, *Gelidium coulteri*, *Gelidium robustum*, *Laurencia pacifica*, *Sargassum muticum*, *Polisiphonia* sp., and *Ulva* sp (Navy and SDUPD 2010). Invertebrates included colonial tunicates (e.g., *Botryllus* sp.), oysters (*Ostrea lurida*), sponges (*Leucilla nuttingi*), mussels (*Mytilus* sp.), feather duster worms (Sabillidae), colonial ascidians (*Botrylloides* sp.), solitary tunicates (e.g., *Ciona* sp., *Styela plicata*), bryozoans (e.g., *Eurystomella* sp.), and the non-native bryozoan *Zoobotryon verticillatum*. Rip-rap structures are known to attract and support a variety of fish and have been reported as good lobster diving and sport fishing sites (Navy and SDUPD 2010), as they provide refuge and feeding areas for certain juvenile and predator fishes, such as perches, basses, dogfish, opaleye, and croaker. In a study to describe Essential Fish Habitat (EFH) (M&A 2010), a number of artificial structures were examined qualitatively for relative abundance and diversity of fish communities and found that, for both fish and invertebrates, artificial reefs ranked as the habitat with the highest number of species observed. Sand and eelgrass habitats also ranked high in number of fish species.

FISH

In 2008, Pondella and Williams (2009) conducted fish surveys throughout San Diego Bay. Surveys were conducted using a variety of methods (e.g., beach seines, trawls) and occurred in both vegetated and unvegetated locations. Convair Lagoon is situated between the North Ecoregion (Ecoregion 1) and North-Central Ecoregion (Ecoregion 2) sampling stations (Figure 4). A total of 7,233 fishes, belonging to 33 species and weighing 36 kg, were collected in the North Ecoregion over the two sampling periods in 2008. Slough anchovy (*Anchoa delicatissima*) was the most abundant species (33.8%), followed by top smelt (*Atherinops affinis*) (29.2%), salema (*Xenistius californiensis*) (18.6%), arrow goby (*Clevelandia ios*) (8.1%), and giant kelpfish (*Heterostichus rostratus*) (2.9%). Salema led in total biomass (24.1%), followed by slough anchovy (15.8%), topsmelt (14.2%), round stingray (*Urobatis halleri*) (9.7%), and spotted sand bass (*Paralabrax maculatofasciatus*) (7.6%). For the North-Central Ecoregion, a total of 3,355 fishes, belonging to 27 species and weighing 55 kg, were collected over the two sampling periods in 2008. Slough anchovy was the most abundant species (49.0%), followed by topsmelt (23.6%), giant kelpfish (6.8%), and bay pipefish (*Syngnathus leptorhynchus*) (6.7%). Round stingray led in total biomass (38.9%), followed by spotted sand bass (24.8%), shortfin corvina (*Cynoscion parvipinnis*) (8.6%), topsmelt (5.3%), and giant kelpfish (4.6%).

ESSENTIAL FISH HABITAT

Under the provisions of the 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act (Federal Register 1997), the amendments require the delineation of EFH for all managed species. EFH has been designated over all tidal marine waters in southern California. Federal action agencies which fund, permit, or carry out activities that may adversely impact EFH are required to consult with the NMFS regarding the potential effects of their actions on EFH, and respond in writing to the NMFS's recommendations.

The ichthyofauna in San Diego Bay has been previously studied (M&A 2000, Allen 1999, Hoffman 1994). These studies have identified 78 species of fish in San Diego Bay. The following analysis makes extensive use of Allen's (1999) data set because it is both recent and comprehensive (surveys

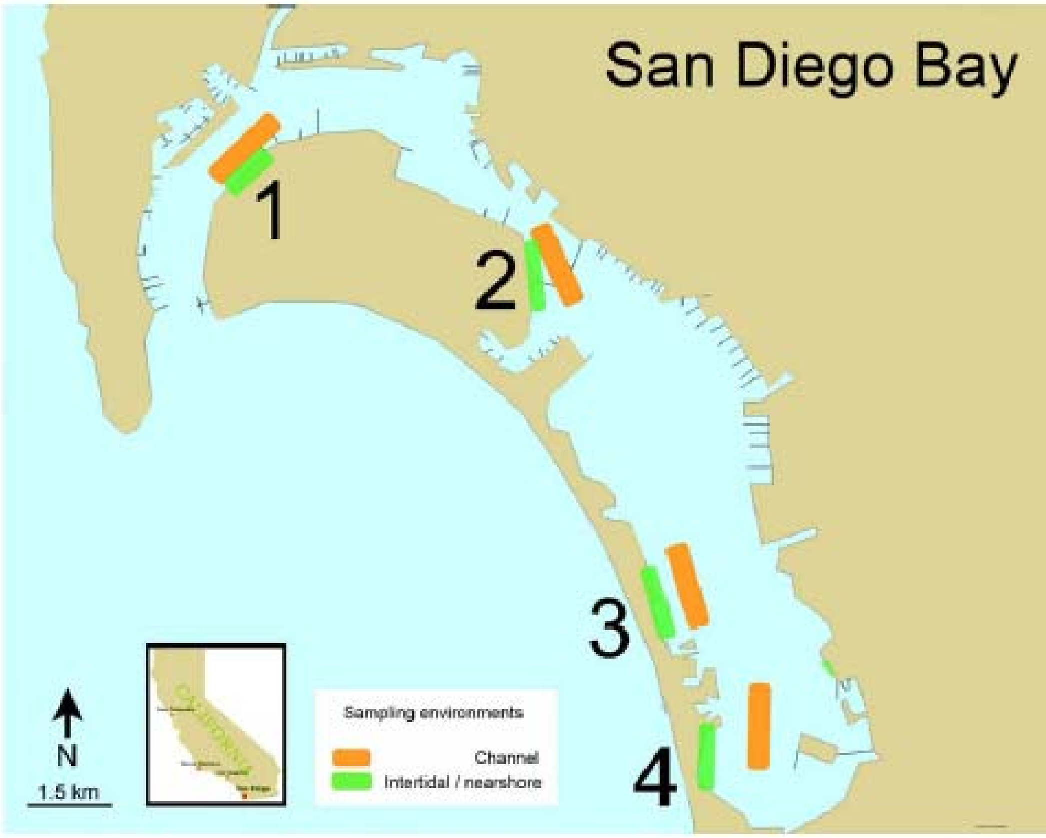

Figure 4. Fish Sampling Locations of the North (1), North-Central (2), South- Central (3) and South (4) Ecoregions in San Diego Bay. From Pondella, and Williams 2009.

were completed quarterly for five and a half years, at four stations throughout San Diego Bay, utilizing six sampling gear types) with a total of 78 species identified. The other studies reviewed for this analysis are utilized primarily to confirm the presence of fish species and to identify any additional species not captured by Allen.

Of these 78 species observed in San Diego Bay, six are managed by the NMFS under two Fishery Management Plans (FMPs)-the Coastal Pelagics and Pacific Groundfish Management Plans (Table 2) (NMFS 1998a, 1998b). Four of the five fish managed under the Coastal Pelagics FMP are represented in San Diego Bay. The northern anchovy and pacific sardine are the most abundant pelagics identified by Allen, ranking 1st and 4th in abundance and 3rd and 10th in biomass, respectively (Table 2). Together, these two species accounted for 46.3% of the total abundance and 11.6% of the total biomass of fish enumerated by Allen (1999). The pacific mackerel and jack mackerel are the other two coastal pelagics of potential concern in the project area. These two species were much lessabundant than the northern anchovy and pacific sardine and were ranked by Allen as 32nd and 52nd in total abundance and 24th and 73rd in total biomass, respectively. Together the two species accounted for less than 1% of total abundance and biomass of fish captured (Allen 1999).

Of the 89 species managed under the Pacific Groundfish FMP (NMFS 2008), two have been found in San Diego Bay during the studies analyzed for this assessment: California scorpionfish and English sole. These species were observed only rarely in San Diego Bay during the five and a half years of Allen's study, ranking 41st and 76th by abundance and 24^{th} and 73^{rd} by biomass, respectively (Table 2). Together these two species accounted for less than 0.5% of the total abundance and biomass of fish captured (Allen 1999).

Table 2. Table of NMFS managed fish species previously found in San Diego Bay. Rank refers to the relative rankings among 78 fish species observed by Allen (1999). Ranks are total abundance and biomass, respectively.

Common Name	Scientific Name	Rank	
		Abundance	Biomass
Coastal Pelagics FMP			
Northern Anchovy	*Engraulis mordax*	1^{st}	3^{rd}
Pacific Sardine	*Sardinops sagax*	4^{th}	10^{th}
Pacific Mackerel	*Scomber japonicus*	32^{nd}	17^{th}
Jack Mackerel	*Trachurus symmetricus*	52^{nd}	29^{th}
Pacific Groundfish FMP			
California Scorpionfish	*Scorpaena gutatta*	41^{st}	24^{th}
English Sole	*Parophrys vetulus*	76^{th}	73^{rd}

BIRDS

San Diego Bay avian surveys were conducted between March 2006 and February , partially in support of the San Diego Bay INRMP revision and in concert with the 2000 San Diego Bay INRMP (Tierra Data Incorporated 2009). One point count sampling location was located in the project area (Location 6; Figure 5). A total of 44 species were observed at Location 6. Of these, only one species, the California least tern (*Sternula antillarum browni*), is listed as endangered (Table 3).

MARINE MAMMALS

Marine mammal species known to be regularly encountered within San Diego Bay, primarily north San Diego Bay, include the California sea lion (*Zalophus californianus*) and coastal bottlenose dolphin (*Tursiops truncatus*). Species that are occasional-to-frequent visitors to the north channels of San Diego Bay include the Pacific harbor seal (*Phoca vitulina*) and gray whale (*Eschrichtius robustus*). The project area is not considered a major seal or sea lion haul out area (Navy and SDUPD 2010).

RARE, THREATENED, AND ENDANGERED SPECIES

The closest nesting site for California least terns (*Sternula antillarum browni*) is located at the San Diego International Airport – Lindbergh Field, approximately 0.25 miles from Convair Lagoon. The nesting areas are found on the southern part of the Air Operations Area, and include three sites (or ovals) that are protected with a seven-inch tall plastic fence to keep chicks from wandering onto the taxiways. The site is managed by the San Diego County Regional Airport Authority.

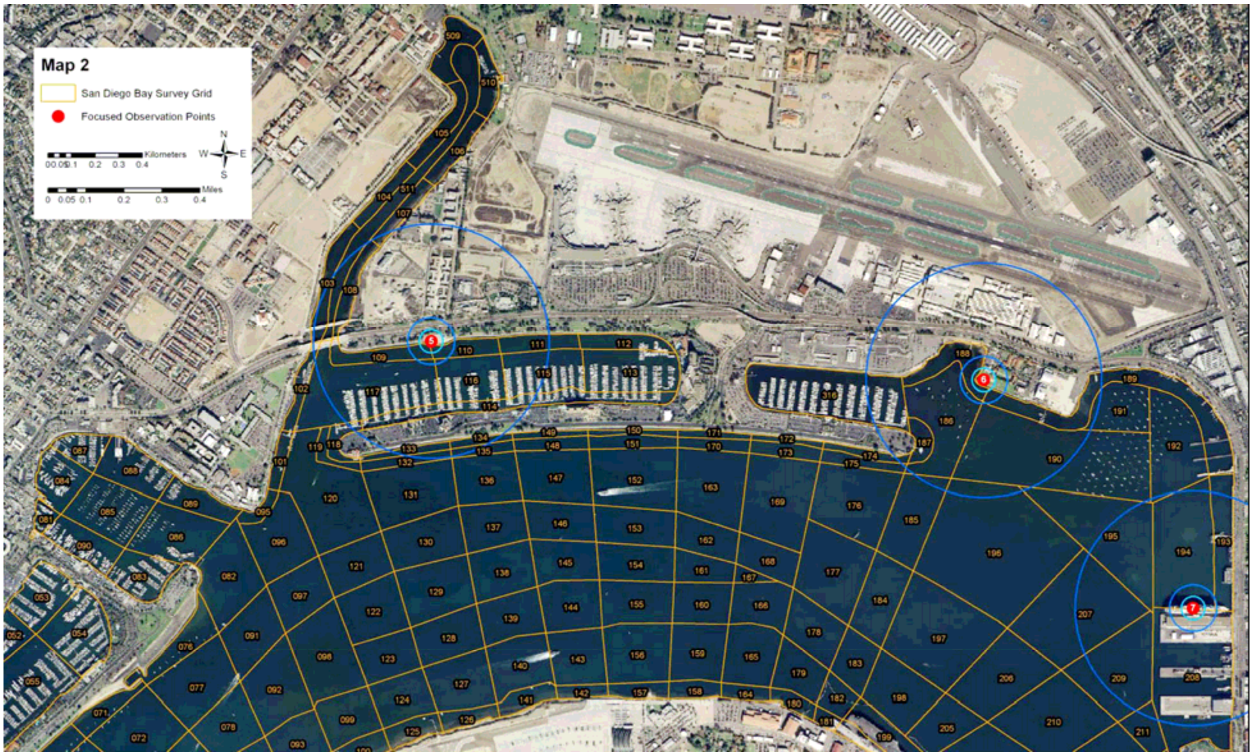

Figure 5. Bird Survey Location at Convair Lagoon (Location 6). From Tierra Data Incorporated 2009.

Colony size and reproductive success have varied widely from year to year depending on prey availability, predation and predator presence, and human disturbance. In 2010, at least 161 chicks from 88 nests hatched successfully, and it was estimated that 29 to 38 young fledged from the site (SDUPD pers. comm.). Predators observed in the area and suspected of predation included ants, peregrine, kestrel, and raven. Also in the area and possibly responsible were opossum, rats, raccoon, cat, great blue heron, night-heron, Cooper's hawk, gulls, barn owl, crow, and starlings.

Western snowy plover (*Charadrius alexandrinus nivosus*), a federally threatened subspecies, has not been observed at the project area but has been observed on the mudflats west of the nesting site at the D Street Fill area in south San Diego Bay. The small sandy beach habitat probably precludes extensive use of the project area by plover species, and none were observed during surveys in 2006 and 2007 (Tierra Data Incorporated 2009).

The only turtle found in San Diego Bay is the east Pacific green sea turtle (*Chelonia mydas*) (Macdonald et al. 1995), which is listed as endangered under the federal Endangered Species Act. They do not breed or nest in San Diego Bay (McDonald et al. 1995), but rather are associated with a breeding population on Islas Revillagigedos, Mexico (Dutton, pers. com.). Both adults and juveniles have been sighted, with individuals seen year round in the channel at the South Bay Power Plant, in South Bay, and around Naval Air Base Coronado.

Table 3. Summary of Bird Abundance at Location 6 (Convair Lagoon) during Falling and Peaking Tide from March 2006 to February 2007. From Tierra Data Incorporated 2009.

Common Name	Scientific Name	Status[1]	Total
western gull	*Larus occidentalis wymani*		172
marbled godwit	*Limosa fedoa fedoa*		142
least sandpiper	*Calidris minutilla*		114
bufflehead	*Bucephala albeola*		45
willet	*Tringa semipalmata inornatus*		44
western grebe	*Aechmophorus occidentalis occidentalis*		37
double-crested cormorant	*Phalacrocorax auritus*		30
black-bellied plover	*Pluvialis squatarola*		21
eared grebe	*Podiceps nigricollis californicus*		19
surfbird	*Aphriza virgata*		17
lesser scaup	*Aythya affinis*		16
semipalmated plover	*Charadrius semipalmatus*		15
mallard	*Anas platyrhynchos platyrhynchos*		12
scaup sp.			11
spotted sandpiper	*Actitis macularius*		10
great blue heron	*Ardea herodias wardi*		9
surf scoter	*Melanitta perspicillata*		9
snowy egret	*Egretta thula thula*		6
killdeer	*Charadrius vociferus vociferus*		5
ruddy turnstone	*Arenaria interpres*		5
belted kingfisher	*Ceryls alcyon*		5
brown pelican	*Pelecanus occidentalis californicus*		4
ring-billed gull	*Larus delawarensis*		4
pied-billed grebe	*Podilymbus podiceps podiceps*		4
American crow	*Corvus brachyrhynchos hesperis*		3
Forster's tern	*Sterna forsteri*		3
caspian tern	*Hydroprogne caspia*		3
Heermann's gull	*Larus heermanni*		3
long-billed curlew	*Numenius americanus*		2
mourning dove	*Zenaida macroura marginella*		2
California least tern	*Sternula antillarum browni*	FE, SE	2
Anna's hummingbird	*Calypte anna*		2
house finch	*Carpodacus mexicanus frontalis*		2
sanderling	*Calidris alba*		2
European starling	*Sturnus vulgaris vulgaris*		2
black phoebe	*Sayornis nigricans semiatra*		1
common raven	*Corvus corax clarionensis*		1
horned grebe	*Podiceps auritus cornutus*		1
European starling	*Sturnus vulgaris vulgaris*		1
western sandpiper	*Calidris mauri*		1
greater yellowlegs	*Tringa melanoleuca*		1
northern mockingbird	*Mimus polyglottos polyglottos*		1
ruddy duck	*Oxyura jamaicensis rubida*		1
herring gull	*Larus argentatus smithsonianus*		1

[1] FE: Federally Endangered; FT: Federally Threatened; SE: CA State Endangered, ST: CA State Threatened; SSC: CA State Species of Special Concern

1990, McDonald and Dutton 1992). It has been estimated that a group of 30 to 60 sea turtles are estimated to reside generally in south San Diego Bay (Navy and SDUPD 2010). However this group may be as large as 100 individuals (Dutton, pers. com.).

EXOTIC SPECIES

Exotic marine species are present in San Diego Bay and have arrived through direct and indirect means, and for intentional and unintentional purposes (Navy and SDUPD 2010). Invasion risks stem from ballast water exchanges and hull fouling, as well as from aquarium, pet, nursery, aquaculture, and seafood industry trade. During the 1998 Regional Bight Survey, the nonindigenous bivalve *Musculista senhousia* was present in more than 70% of the samples, making it the most widely distributed trawl caught invertebrate in the bay. *Musculista senhousia* together with another nonindigenous species *Microcosmus squamiger*, accounted for over 50% of the total catch (Navy and SDUPD 2010). The ecological ramifications of the introduction of any of these species could range from minor to very significant, depending on local conditions and natural competition. One such species that may have significant local impacts is the green alga, *Caulerpa taxifolia*, which has been eradicated from several regional water bodies. Current regulation require that all marine projects with the potential to disturb the bottom are required to conduct a survey for invasive seaweeds in the genus *Caulerpa* prior to construction, per the *Caulerpa* Control Protocol (NMFS 2007) to avoid any potential spreading or further infestation, and to initiate eradication efforts.

IMPACT ANALYSIS

SIGNIFICANCE CRITERIA

Criteria for determining the significance of project-related impacts on biological resources are based on the resource's relative sensitivity and regional status, including the proportion of the resource that would be affected relative to its occurrence in the project region (San Diego Bay, San Diego County), the sensitivity of the resource to activities (e.g., noise or disturbance) associated with the proposed project, and the duration or ecological ramifications associated with the effect. Impacts are considered significant if they would results in:

- Degradation of critical habitat or reduction in the population size of a listed species (threatened or endangered);
- Degradation or loss of relatively rare or biologically valuable habitat;
- A measurable change in ecological function within the project vicinity;
- A measurable change in species composition or abundance beyond that of normal variability;
- A substantive loss of water surface area through fill or surface water coverage as a result of permanent structures. Small structures such as moorings, navigational aids, individual or widely spaced piles do not result in a substantive loss of water area; or
- An obstruction or alteration of circulation patterns that result in a discernable degradation of water mixing, circulation, or flushing to the extent that biota would be negatively affected in the system.

Short-term impacts are those lasting less than 5 years, while long-term impacts are those that last for longer periods or are permanent (SDUPD 2000). A direct impact is defined as physical modification, such as shading of a previously unshaded habitat or loss of habitat. Indirect impacts are generally more removed from the actual environmental change in both space and time.

CONSTRUCTION

Construction of the proposed CDF will transform the majority of the existing upland and marine habitats to primarily upland habitat. Some man-made modified habitat will be created at the offshore extent of the CDF (Figure 6).

Specific non-significant impacts associated with the proposed project include the following:

- Filling and surfacing of 1.10 acres (0.45 ha.) of upland habitat would not substantively alter the existing biology of the area. This area consists principally of bare soil, man-modified or rip-rap shoreline above the highest high tide line, and paved surfaces. Sparse weedy vegetation occurs along this upland fringe between the existing property line and shore.
- Net loss of approximately 1.12 acres (0.45 ha) of man-made intertidal habitat (i.e., revetment, boat ramp) is not considered significant due to the relative abundance of armored shoreline within San Diego Bay. This is equivalent to approximately 0.25 miles (0.40 kilometers), and represents approximately 0.6% of the armored shoreline habitat within San Diego Bay (Navy and SDUPD 2010).
- Filling of the 0.31 acres (0.13 ha.) of moderately deep subtidal habitat within Convair Lagoon will result in the loss of existing epifauna and infauna assemblages. This is not considered significant due to the relative abundance of moderately deep subtidal habitat within San Diego Bay, as the proposed fill represents approximately 0.01% of this habitat type within the bay (Navy and SDUPD 2010).
- Short-term increases in noise during construction (e.g., dredging and filling) could affect the behavior of some common species. This impact is not considered significant for common waterbirds, fish, and mobile marine invertebrates that can temporarily relocate to adjacent habitats.
- Short-term increases in turbidity in the vicinity during filling activities would result in a potential reduction in foraging opportunities for sensitive diving birds, particularly least tern which nest at Lindbergh Field. This would be considered significant if the dredging activities occurred during the least tern nesting season (April 1 to September 15).
- Impacts to marine mammals and sea turtles are not considered significant, as most are transitory in the vicinity of the project area, and tracking data on sea turtles indicate that movement is generally limited to areas south of the Coronado Bridge (Navy and SDUPD 2010).
- Filling of Convair Lagoon would alter the circulation patterns in the immediate vicinity, although the change in circulation is not expected to degrade water quality to the extent that biota would be negatively affected. In addition, due to the presence of armored shoreline in the immediate vicinity of Convair Lagoon, the proposed project is not expected to lead to any changes to adjacent shorelines. Therefore, no significant impacts due to changes in circulations patterns would occur from the proposed project.

Specific significant impacts associated with the proposed project include the following:

- An unintentional benefit of the rip-rap used to create the remedial cap is the presence of a hard, heterogeneous substrate (i.e., EFH) that creates habitat for a diverse assemblage of fauna and flora (Davis et al. 2002). The loss of approximately 0.19 acres (0.08 ha) of subtidal man-made habitat within Convair Lagoon is considered significant due to the high value of this habitat type (M&A 2010).

- Loss of approximately 0.11 acres (0.04 ha) of salt marsh habitat, 4.01 acres (1.63 ha) of intertidal habitat, and 4.49 acres (1.82 ha) of shallow subtidal habitat, including an estimated 6.01 acres (2.43 ha) of eelgrass habitat is considered significant due to the high ecological value of eelgrass habitat and the declining trend in the inventory of marsh, intertidal, and shallow subtidal habitats throughout San Diego Bay that are preferentially used by shorebirds, wading birds, some diving birds and waterfowl.
- Introduction of approximately 9.85 acres (3.99 ha) of hard substrate associated with the placement of the CDF. This category includes the sum of all habitat categories below +7.8 ft MLLW. This impact is considered significant due to loss of surface coverage for waterbird foraging habitat.
- Resuspension of contaminated sediments during filling activities could result in distribution of contaminated sediments. This impact is considered significant if contaminated sediment is released into the San Diego Bay beyond the project footprint.

MITIGATION MEASURES

This section discusses measures that would be implemented to reduce impacts of the proposed project to biological resources. Mitigation measures to reduce significant impacts to a less than significant level for the proposed project have been categorized as: 1) Construction Period Impact Minimization/Avoidance Measures; 2) Compensatory EFH Loss Replacement; 3) Compensatory Eelgrass Loss Replacement, and 4) Bay Surface Coverage and Fill Offset.

CONSTRUCTION PERIOD IMPACT MINIMIZATION/AVOIDANCE MEASURES

- Schedule construction outside of the least tern nesting season (April 1 to September 15) or if construction were to occur during least tern nesting season, the use of silt curtains or other turbidity control methods around turbidity generating operations should be implemented. This would restrict the area of surface turbidity. With a control of turbidity to this small portion of the available bay, no significant foraging opportunities for this species are anticipated to be lost.
- Use directional (shielded) lighting on construction lighting and maintain lowered crane booms when not in use during the least tern nesting season to avoid creation of additional foraging perches for raptors to use near the tern colony.
- Monitor least tern foraging behavior and activities on and around the Lindberg Field colony during the breeding season. Halt or alter activities if indications of disturbance or negative behavioral response in terns are observed as a result of construction activities.
- Use of silt curtains or other turbidity control methods around turbidity generating fill operations to control the distribution of sedimentation from extending to areas beyond the project site. The curtain should remain in place through the construction period and until water within the curtain has returned to a clear condition, indicating suspended sediments have resettled to the bottom. Any removed structures should be rinsed within the curtained area for ultimate upland disposal. With the implementation of these measures, impacts to water and sediment quality would not be considered significant.

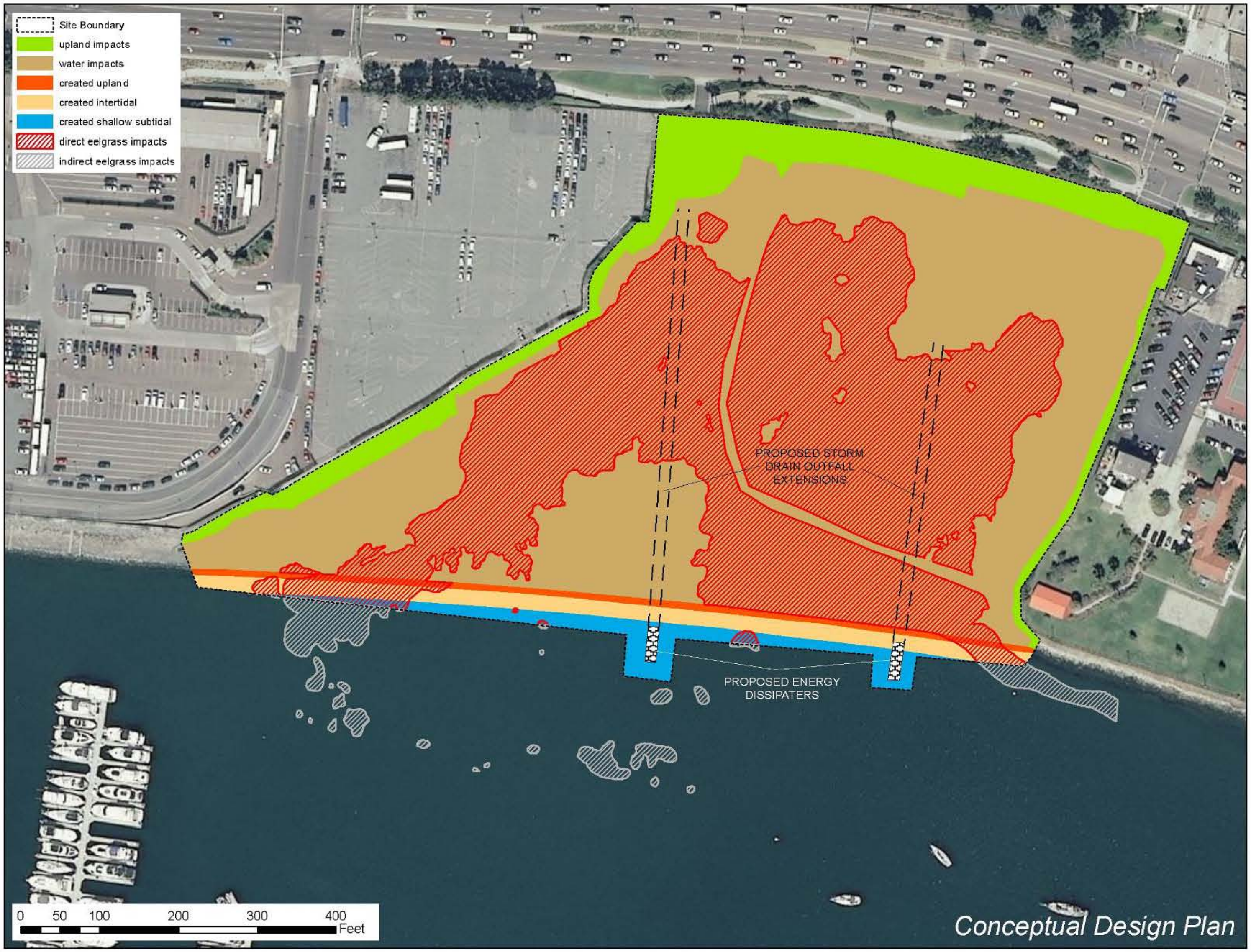

Figure 6. Impacts associated with the Convair Lagoon Confined Disposal Facility Conceptual Design.

- Pre-construction surveys for the invasive alga, *Caulerpa taxifolia* per the *Caulerpa* Control Protocol version 3 (NMFS 2007) prior to any bottom-disturbing event would reduce the likelihood of *Caulerpa* impacts to less than significant.

COMPENSATORY EFH LOSS REPLACEMENT

The loss of approximately 0.19 acres (0.08 ha) of man-made habitat within Convair Lagoon is offset by the creation in approximately 0.39 acres (0.16 ha) of similar habitat from the creation of the containment jetty (Table 4). The creation of the containment jetty would result in an additional 0.20 acres (0.08 ha) of subtidal man-made habitat, and therefore reduce impacts to less than significant (Table 4).

Table 4. Existing and Created Man-Made Habitat of Proposed Project.

Habitat Type	Existing	Created	Net Change
Shallow Subtidal (-2 to -12 ft MLLW)	0.19 ac (0.08 ha)	0.39 ac (0.16 ha)	+0.20 ac (0.08 ha)

COMPENSATORY EELGRASS LOSS REPLACEMENT

A pre-construction eelgrass survey will be required to determine the areal coverage of eelgrass habitat present in the project area prior to construction, and a post-construction survey will document the actual impact by the proposed project; however, it is estimated that approximately 5.64 acres (2.28 ha.) of eelgrass will be directly impacted due to construction. In addition, eelgrass is present outside of the direct project footprint that may be affected by construction activities (e.g., anchoring of barges, resuspension of sediments during excavation for the containment jetty). The coverage of eelgrass outside of the project footprint is approximately 0.37 acres (0.15 ha). Given the uncertainty regarding the exact construction technique and methodology, this analysis will assume the most conservative impact, which will include the eelgrass that will be directly and indirectly affected, totaling 6.01 acres (2.43 ha). This eelgrass must be replaced by a transplant within the same ecoregion or an adjacent ecoregion within San Diego Bay sufficient to achieve a 1.2:1 replacement ratio in accordance with the current SCEMP (NMFS 1991), with the total mitigation estimated to be 7.22 acres (2.92 ha) (Table 5).

Table 5. Eelgrass Coverage and Mitigation Criteria.

	2011 Eelgrass Coverage Acres (ha)	Eelgrass Mitigation (1.2:1 per SCEMP) Acres (ha)
Direct Project Footprint	5.64 ac (2.28 ha)	6.77 ac (2.74 ha)
Indirect Project Footprint	0.37 ac (0.15 ha)	0.45 ac (0.18 ha)
Total Eelgrass Impact	6.01 ac (2.43 ha)	7.22 ac (2.92 ha)

An eelgrass mitigation plan must be prepared and approved by the Port's Environmental Director and ACOE, acting in conjunction with the resource agencies, including NMFS, USFWS, U.S. Environmental Protection Agency (EPA), and the CDFG. The plan shall include details regarding methods and results of the eelgrass survey, description of the mitigation site, transplant methods, program schedule, 5-year monitoring program, success criteria, and actions to take for failed mitigation goals, all consistent with the SCEMP (NMFS 1991). Transplantation of eelgrass may only occur with the written approval of the CDFG.

Potential eelgrass mitigation sites are discussed in a separate report (Report 2).

BAY SURFACE COVERAGE AND FILL OFFSET

The construction of the CDF will reduce the amount of available habitat within San Diego Bay. It was estimated that 9.85 acres (3.99 ha) of bay fill and surface coverage will result from the completion of the CDF, including the loss of loss of approximately 0.11 acres (0.04 ha) of salt marsh habitat, 4.01 acres (1.63 ha) of intertidal habitat, and 4.49 acres (1.82 ha) of shallow subtidal habitat (Table 1). To mitigate for the loss associated with fills and surface coverage, new bay habitat must be created via excavation of shoreline and creation of tidal influence in previously non-tidal areas. The mitigation ratio for intertidal and subtidal habitats would occur at a 1:1 ratio; however, the coastal salt marsh habitat would have to be mitigated at a 4:1 ratio (i.e., creation of 0.44 acres [0.18 ha] of salt marsh habitat for 0.11 acres [0.04] impact). Potential bay fill/coverage mitigation sites are discussed in a separate report (Report 2).

UNAVOIDABLE SIGNIFICANT ADVERSE IMPACTS

Based on the proposed mitigation measures outlined above, no unavoidable adverse impacts to terrestrial and marine habitats and/or biota would be expected.

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Appendix A
Southern California Eelgrass Mitigation Policy, rev. 11

SOUTHERN CALIFORNIA EELGRASS MITIGATION POLICY

(Adopted July 31, 1991)

Eelgrass (Zostera marina) vegetated areas are recognized as important ecological communities in shallow bays and estuaries because of their multiple biological and physical values. Eelgrass habitat functions as an important structural environment for resident bay and estuarine species, offering both predation refuge and a food source. Eelgrass functions as a nursery area for many commercially and recreational important finfish and shellfish species, including those that are resident within bays and estuaries, as well as oceanic species that enter estuaries to breed or spawn. Eelgrass also provides a unique habitat that supports a high diversity of non-commercially important species whose ecological roles are less well understood.

Eelgrass is a major food source in nearshore marine systems, contributing to the system at multiple trophic levels. Eelgrass provides the greatest amount of primary production of any nearshore marine ecosystem, forming the base of detrital-based food webs and as well as providing a food source for organisms that feed directly on eelgrass leaves, such as migrating waterfowl. Eelgrass is also a source of secondary production, supporting epiphytic plants, animals, and microbial organisms that in turn are grazed upon by other invertebrates, larval and juvenile fish, and birds.

In addition to habitat and resource attributes, eelgrass serves beneficial physical roles in bays and estuaries. Eelgrass beds dampen wave and current action, trap suspended particulates, and reduce erosion by stabilizing the sediment. They also improve water clarity, cycle nutrients, and generate oxygen during daylight hours.

In order to standardize and maintain a consistent policy regarding mitigating adverse impacts to eelgrass resources, the following policy has been developed by the Federal and State resource agencies (National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the California Department of Fish and Game). While the intent of this Policy is to provide a basis for consistent recommendations for projects that may impact existing eelgrass resources, there may be circumstances (e.g., climatic events) where flexibility in the application of this Policy is warranted. As a consequence, deviations from the stated Policy may be allowed on a case-by-case basis. This policy should be cited as the Southern California Eelgrass Mitigation Policy (revision 11).

For clarity, the following definitions apply. "Project" refers to work performed on-site to accomplish the applicant's purpose. "Mitigation" refers to work performed to compensate for any adverse impacts caused by the "project". "Resource agencies" refers to National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Game (CDFG).

1. **Mitigation Need.** Eelgrass transplants shall be considered only after the normal provisions and policies regarding avoidance and minimization, as addressed in the Section 404 Mitigation Memorandum of Agreement between the Corps of Engineers and Environmental Protection Agency, have been pursued to the fullest extent possible prior to the development of any mitigation program. Mitigation will be required for the loss of

existing vegetated areas, loss of potential eelgrass habitat, and/or degradation of existing/potential eelgrass habitat. Mitigation for boat docks and/or related work is addressed in section 2.

2. **Boat Docks and Related Structures**. Boat docks, ramps, gangways and similar structures should avoid eelgrass vegetated or potential eelgrass vegetated areas to the maximum extent feasible. If avoidance of eelgrass or potential eelgrass areas is infeasible, impacts should be minimized by utilizing, to the maximum extent feasible, construction materials that allow for greater light penetration (e.g., grating, translucent panels, etc.). For projects where the impact cannot be determined until after project completion (i.e., vessel shading, vessel traffic) a determination regarding the amount of mitigation shall be made based upon two annual monitoring surveys conducted during the time period of August to October which document the changes in the bed (areal extent and density) in the vicinity of the footprint of the boat dock, moored vessel(s), and/or related structures. Any impacts determined by these monitoring surveys shall be mitigated per sections 3-12 of this policy. Projects subject to this section must include a statement from the applicant indicating their understanding of the potential mitigation obligation which may follow the initial two-year monitoring.

3. **Mitigation Map.** The project applicant shall map thoroughly the area, distribution, density and relationship to depth contours of any eelgrass beds likely to be impacted by project construction. This includes areas immediately adjacent to the project site which have the potential to be indirectly or inadvertently impacted as well as potential eelgrass habitat areas. Potential habitat is defined as areas where eelgrass would normally be expected to occur but where no vegetation currently exists. Factors to be considered in delineating potential habitat areas include appropriate circulation, light, sediment, slope, salinity, temperature, dissolved oxygen, depth, proximity to eelgrass, history of eelgrass coverage, etc.

Protocol for mapping shall consist of the following format:

1) Bounding Coordinates

Horizontal datum - Universal Transverse Mercator (UTM), NAD 83, Zone 11 is the preferred projection and datum. If another projection or datum is used, the map and spatial data must include metadata that accurately defines the projection and datum.

Vertical datum - Mean Lower Low Water (MLLW), depth in feet.

2) Units

Transects and grids in meters.

Area measurements in square meters/hectares.

3) File format

A spatial data layer compatible with readily available geographic information system software must be sent to NMFS and any other interested resource agency when the area mapped has greater than 10 square meters of eelgrass. For those areas with less than 10 square meters, a table must be provided giving the bounding x,y coordinates of the eelgrass areas. In addition to a spatial layer or table, a hard-copy map should be included within the survey report. The projection and datum should be clearly defined in the metadata and/or an associated text file.

All mapping efforts must be completed during the active growth phase for the vegetation (typically March through October) and shall be valid for a period of 60 days with the exception of surveys completed in August - October. Surveys completed after unusual climatic events (i.e., high rainfall) may have modified requirements and surveyors should contact NMFS, CDFG, and USFWS to determine if any modifications to the standard survey procedures will be required. A survey completed in August - October shall be valid until the resumption of active growth (i.e., in most instances, March 1). After project construction, a post-project survey shall be completed within 30 days. The actual area of impact shall be determined from this survey.

4. **Mitigation Site.** The location of eelgrass transplant mitigation shall be in areas similar to those where the initial impact occurs. Factors such as, distance from project, depth, sediment type, distance from ocean connection, water quality, and currents are among those that should be considered in evaluating potential sites.

5. **Mitigation Size.** In the case of transplant mitigation activities that occur concurrent to the project that results in damage to the existing eelgrass resource, a ratio of 1.2 to 1 shall apply. That is, for each square meter adversely impacted, 1.2 square meters of new suitable habitat, vegetated with eelgrass, must be created. The rationale for this ratio is based on, 1) the time (i.e., generally three years) necessary for a mitigation site to reach full fishery utilization and 2) the need to offset any productivity losses during this recovery period within five years. An exception to the 1.2 to 1 requirement shall be allowed when the impact is temporary and the total area of impact is less than 100 square meters. Mitigation on a one-for-one basis shall be acceptable for projects that meet these requirements (see section 11 for projects impacting less than 10 square meters).

Transplant mitigation completed three years in advance of the impact (i.e., mitigation banks) will not incur the additional 20 percent requirement and, therefore, can be constructed on a one-for-one basis. However, all other annual monitoring requirements (see sections 8-9) remain the same irrespective of when the transplant is completed.

Project applicants should consider increasing the size of the required mitigation area by 20-30 percent to provide greater assurance that the success criteria, as specified in Section 10, will be met. In addition, alternative contingent mitigation must be specified, and included in any required permits, to address situation where performance standards (see section 10) are not likely to be met.

For potential eelgrass habitat, a ratio of 1 to 1 of equivalent habitat shall be created.

Degradation of existing eelgrass vegetated habitat that results in a reduction of density greater than 25 percent shall be mitigated on a one-for-one basis. For example, a 25 percent reduction in density of a 100 square meter (100 turions/meter) eelgrass bed to 75 turions/meter would require the establishment of 25 square meters of new eelgrass with a density at or greater than the pre-impact density. All other provisions of the Policy would apply.

6. **Mitigation Technique.** Techniques for the construction and planting of the eelgrass mitigation site shall be consistent with the best available technology at the time of the project. Donor material shall be taken from the area of direct impact whenever possible, but also should include a minimum of two additional distinct sites to better ensure genetic diversity of the donor plants. No more than 10 percent of an existing bed shall be harvested for transplanting purposes. Plants harvested shall be taken in a manner to thin an existing bed without leaving any noticeable bare areas. Written permission to harvest donor plants must be obtained from the California Department of Fish and Game.

Plantings should consist of bare-root bundles consisting of 8-12 individual turions. Specific spacing of transplant units shall be at the discretion of the project applicant. However, it is understood that whatever techniques are employed, they must comply with the stated requirements and criteria.

7. Mitigation Timing. For off-site mitigation, transplanting should be started prior to or concurrent with the initiation of in-water construction resulting in the impact to the eelgrass bed. Any off-site mitigation project which fails to initiate transplanting work within 135 days following the initiation of the in-water construction resulting in impact to the eelgrass bed will be subject to additional mitigation requirements as specified in section 8. For on-site mitigation, transplanting should be postponed when construction work is likely to impact the mitigation. However, transplanting of on-site mitigation should be started no later than 135 days after initiation of in-water construction activities. A construction schedule which includes specific starting and ending dates for all work including mitigation activities shall be provided to the resource agencies for approval at least 30 days prior to initiating in-water construction.

8. **Mitigation Delay.** If, according to the construction schedule or because of any delays, mitigation cannot be started within 135 days of initiating in-water construction, the eelgrass replacement mitigation obligation shall increase at a rate of seven percent for each month of delay. This increase is necessary to ensure that all productivity losses incurred during this period are sufficiently offset within five years.

9. **Mitigation Monitoring.** Monitoring the success of eelgrass mitigation shall be required for a period of five years for most projects. Monitoring activities shall determine the area of eelgrass and density of plants at the transplant site and shall be conducted at initial planting, 6, 12, 24, 36, 48, and 60 months after completion of the transplant. All monitoring work must be conducted during the active vegetative growth period and shall avoid the winter months of November through February. Sufficient flexibility in the scheduling of the 6 month surveys shall be allowed in order to ensure the work is completed during this active growth period. Additional monitoring beyond the 60 month period may be required in those instances where stability of the proposed transplant site is questionable or where other factors may influence the long-term success of transplant.

The monitoring of an adjacent or other acceptable control area (subject to the approval of the resource agencies) to account for any natural changes or fluctuations in bed width or density must be included as an element of the overall program.

A monitoring schedule that indicates when each of the required monitoring events will be completed shall be provided to the resource agencies prior to or concurrent with the initiation of the mitigation (see attached monitoring and compliance summary form).

Monitoring reports shall be provided to the resource agencies within 30 days after the completion of each required monitoring period and shall include the summary sheet included at the end of this policy.

10. **Mitigation Success.** Criteria for determination of transplant success shall be based upon a comparison of vegetation coverage (area) and density (turions per square meter) between the **adjusted project impact area** (i.e., original impact area multiplied by 1.2) and **mitigation site(s)**. Extent of vegetated cover is defined as that area where eelgrass is present and where gaps in coverage are less than one meter between individual turion clusters. Density of shoots is defined by the number of turions per area present in representative samples within the original impact area, control or transplant bed. Specific criteria are as follows:

> a. the mitigation site shall achieve a minimum of 70 percent area of eelgrass and 30 percent density as compared to the adjusted project impact area after the first year.
>
> b. the mitigation site shall achieve a minimum of 85 percent area of eelgrass and 70 percent density as compared to the adjusted project impact area after the second year.
>
> c. the mitigation site shall achieve a sustained 100 percent area of eelgrass bed and at least 85 percent density as compared to the adjusted project impact area for the third, fourth and fifth years.

Should the required eelgrass transplant fail to meet any of the established criteria, then a Supplementary Transplant Area (STA) shall be constructed, if necessary, and planted. The size of this STA shall be determined by the following formula:

$$STA = MTA \text{ x } (|A_t + D_t| - |A_c + D_c|)$$

MTA = mitigation transplant area.
A_t = transplant deficiency or excess in area of coverage criterion (%).
D_t = transplant deficiency in density criterion (%).
A_c = natural decline in area of control (%).
D_c = natural decline in density of control (%).

The STA formula shall be applied to actions that result in the degradation of habitat (i.e., either loss of areal extent or reduction in density).

Five conditions apply:

1) For years 2-5, an excess of only up to 30% in area of coverage over the stated criterion with a density of at least 60% as compared to the project area may be used to offset any deficiencies in the density criterion.
2) Only excesses in area criterion equal to or less than the deficiencies in density shall be entered into the STA formula.
3) Densities which exceed any of the stated criteria shall not be used to offset any deficiencies in area of coverage.
4) Any required STA must be initiated within 120 days following the monitoring event that identifies a deficiency in meeting the success criteria. Any delays beyond 120 days in the implementation of the STA shall be subject to the penalties as described in Section 8.
5) Annual monitoring will be required of the STA for five years following the implementation and all performance standards apply to the STA.

11. **Mitigation Bank.** Any mitigation transplant success that, after five years, exceeds the mitigation requirements, as defined in section 10, may be considered as credit in a "mitigation bank". Establishment of any "mitigation bank" and use of any credits accrued from such a bank must be with the approval of the resource agencies and be consistent with the provisions stated in this policy. Monitoring of any approved mitigation bank shall be conducted on an annual basis until all credits are exhausted.

12. **Exclusions.**

1) Placement of a single pipeline, cable, or other similar utility line across an existing eelgrass bed with an impact corridor of no more than 1 meter wide may be excluded from the provisions of this policy with concurrence of the resource agencies. After project construction, a post-project survey shall be completed within 30 days and the results shall be sent to the resource agencies. The actual area of impact shall be determined from this survey. An additional survey shall be completed after 12 months to insure that the project or impacts attributable to the project have not exceeded the allowed 1 meter corridor width. Should the post-project or 12 month survey demonstrate a loss of eelgrass greater than the 1 meter wide corridor, then mitigation pursuant to sections 1-11 of this policy shall be required.

2) Projects impacting less than 10 square meters. For these projects, an exemption may be requested by a project applicant from the mitigation requirements as stated in this policy, provided suitable out-of-kind mitigation is proposed. A case-by-case evaluation and determination regarding the applicability of the requested exemption shall be made by the resource agencies.

(last revised 08/30/05)

Southern California Eelgrass Mitigation Policy
Monitoring and Compliance Reporting Summary

PERMIT DATA:

Permit (Type, Number)	Issuance Date	Expiration Date	Agency Contact
ACOE:____________________			
CDP:____________________			
Other:____________________			

EELGRASS IMPACT AND MITIGATION REQUIREMENTS SUMMARY:

Permitted Eelgrass Impact Estimate	(m^2)	
Actual Eelgrass Impact,	(m^2)	(post-const. survey date)
Eelgrass Mitigation Requirement	(m^2)	(mitigation plan ref.)
Impact Site Location	(location)	
Impact Site Center Coordinates	(define projection and datum)	
Mitigation Site Location	(location)	
Mitigation Site Center Coordinates	(define projection and datum)	

PERMITTEE CONTACT INFORMATION:

Project Name	(same as permit ref.)
Permittee Information	(permittee name)
	(mailing address)
	(city, state, zip)
	(permittee contact)
	(phone, fax., e-mail)
Mitigation Consultant	(consultant contact)
	(phone, fax., e-mail)

PROJECT ACTIVITY DATA:

Activity	Start Date	End Date	Reference Info.
Eelgrass Impact			
Installation of Eelgrass Mitigation			
Initiation of Mitigation Monitoring			

MITIGATION STATUS DATA:

Mitigation Milestone	Scheduled Survey	Survey Date	Area (m^2)	Density (turions/m^2)	Reference Info.
Requirement					
0-month					
6-month					
12-month					
24-month					
36-month					
48-month					
60-month					

FINAL ASSESSMENT:

Was mitigation met?	
Were mitigation and monitoring performed timely?	
Was delay penalty required or were supplemental mitigation programs necessary?	

FINAL
SHIPYARD SEDIMENT ALTERNATIVES ANALYSIS
CONVAIR LAGOON CONFINED DISPOSAL FACILITY ALTERNATIVE
MARINE BIOLOGICAL RESOURCES TECHNICAL REPORT

REPORT 2 OF 2:
CONVAIR LAGOON MITIGATION SITE ANALYIS

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May 31, 2011

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Convair Lagoon Mitigation Site Analysis

INTRODUCTION

Brown and Winters has contracted Merkel & Associates, Inc. (M&A) to conduct an assessment of marine biological resources for a proposed confined disposal facility (CDF) at Convair Lagoon, located in north San Diego Bay, California (Figure 1). Convair Lagoon is a shallow embayment that was the site of a polychlorinated biphenyl (PCB) remedial action that included the construction of sediment cap that was completed in 1997. In addition, an eelgrass mitigation program was implemented in 1997 and completed in 2003, and included the creation of 4.15 acres (1.68 hectares [ha]) of eelgrass habitat (TDY 2003).

Report one of the two part series described the proposed alternative, existing conditions, and potential impacts to marine resources from the proposed project (M&A 2011). This report discusses potential mitigation options to reduce the impacts to less than significant.

It should be noted that mitigation options discussed in this report are only potential locations, and that consultation with resource and regulatory agencies (e.g., Army Corps of Engineers [ACOE], National Marine Fisheries Service [NMFS], U.S. Fish and Wildlife Service [USFWS], U.S. Environmental Protection Agency [EPA], California Department of Fish and Game [CDFG], California Coastal Commission [CCC]) would be required prior to pursuing any option. In addition, there is uncertainty regarding jurisdiction and property ownership of the proposed mitigation sites, and therefore, if mitigation were to occur on non-Port of San Diego property, the Port would have to establish a leasing agreement with the current property owner(s). Lastly, it is generally believed that the agencies would prioritize the potential mitigation options based on the following locational criteria:

1. Within San Diego Bay and within the same ecoregion (e.g., north ecoregion)
2. Within San Diego Bay and within adjacent ecoregions (e.g., north-central ecoregion)
3. Within San Diego Bay
4. Off-site (outside San Diego Bay)

SUMMARY OF IMPACTS

Mitigation to reduce significant impacts to a less than significant level for the proposed project have been categorized as: 1) Compensatory Eelgrass Loss Replacement, and 2) Bay Surface Coverage and Fill Offset. Within these categories, potential locations are described, as in some instances, the mitigation may not be achievable at a single location, or if constraints are present, multiple locations can be utilized. The proposed locations are depicted in Figure 2.

Figure 1. Convair Lagoon, San Diego Bay, CA.

Figure 2. Potential Mitigation Sites for Convair Lagoon CDF Alternative.

Compensatory Eelgrass Loss Replacement

It was estimated that approximately 5.64 acres (2.28 hectares [ha]) of eelgrass would be directly impacted due to construction (M&A 2011). In addition, eelgrass was present outside of the direct project footprint that may be affected by construction activities (e.g., anchoring of barges, resuspension of sediments during excavation for the containment jetty). The coverage of eelgrass outside of the project footprint was approximately 0.37 acres (0.15 ha). Given the uncertainty regarding the exact construction technique and methodology, the analysis assumed the most conservative impact, which included the eelgrass that would be directly and indirectly affected (6.01 acres [2.43 ha]). This eelgrass must be replaced by a transplant to achieve a 1.2:1 replacement ratio in accordance with the current Southern California Eelgrass Mitigation Policy (SCEMP; NMFS 1991), and would result in a mitigation requirement of 7.22 acres (2.92 ha).

The project proposes to mitigate for eelgrass impacts by creating eelgrass habitat at one or more locations within San Diego Bay by raising the bayfloor elevation to approximately -5 ft (-1.5 m) mean lower low water (MLLW) with dredged materials and planting eelgrass on the elevated plateau. Several locations being considered include the former Naval Training Center (NTC) channel, Harbor Island – West Basin, adjacent to Convair Lagoon, A-8 Anchorage, South Bay Borrow Site, Emory Cove Channel, South Bay Power Plant Channel, and South Bay Power Plant (Figure 2). It should be noted that the A-8 Anchorage, South Bay Borrow Site, South Bay Power Plant Channel, and South Bay Power Plant sites are located in adjacent ecoregions, and in regards to eelgrass mitigation, it has been the position of the resource agencies (e.g., NMFS) that any mitigation should occur within the impacted ecoregion, if feasible.

An eelgrass mitigation plan must be prepared and approved by the Port's Environmental Director and ACOE, acting in conjunction with the resource agencies, including NMFS, USFWS, EPA, and the CDFG. The plan shall include details regarding methods and results of the eelgrass survey, description of the mitigation site, transplant methods, program schedule, 5-year monitoring program, success criteria, and actions to take for failed mitigation goals, all consistent with the SCEMP (NMFS 1991). Transplantation of eelgrass may only occur with the written approval of the CDFG.

Bay Surface Coverage and Fill Offset

The construction of the CDF will reduce the amount of available habitat within San Diego Bay. It was estimated that approximately 9.85 acres (3.98 ha) of bay fill and surface coverage will result from the completion of the CDF, including the loss of loss of approximately 0.11 acres (0.04 ha) of salt marsh habitat, 4.01 acres (1.63 ha) of intertidal habitat, and 4.49 acres (1.82 ha) of shallow subtidal habitat. To mitigate for the loss associated with fills and surface coverage, new bay habitat must be created via excavation of shoreline and creation of tidal influence in previously non-tidal areas. The mitigation ratio for intertidal and subtidal habitats would occur at a 1:1 ratio; however, the coastal salt marsh habitat would have to be mitigated at a 4:1 ratio (i.e., creation of 0.44 acres [0.18 ha] of salt marsh habitat for 0.11 acres [0.04] impact).

To mitigate for the loss of intertidal and subtidal habitat, as well as, bay coverage, five possible locations are being evaluated: Grand Caribe Isle in the Coronado Cays, D Street Fill just across the Sweetwater Channel from the National City Marine Terminal (NCMT), the South Bay Power Plant, the Salt Works, and Pond 20 adjacent to the Salt Works (Figure 2). These sites would be lowered from upland elevations to create intertidal and subtidal habitats, except for the South Bay Power

Plant, which would require filling the existing the intake and discharge channels of the power plant to create tidal lands.

DESCRIPTION OF MITIGATION SITES

FORMER NAVAL TRAINING CENTER CHANNEL

The former Naval Training Center (NTC) Channel is located north of North Harbor Drive Boulevard (Figure 3). The channel extends approximately 1 mile (1.6 km) and covers approximately 54 acres (22 ha). The sides of the channel consist of rip-rap, and the majority of the substrate consists for soft bay muds. The average depth of the channel is approximately -12 to -14 ft (-3.7 to -4.3 m) MLLW; however, the edges of the channel are shallow and support extensive eelgrass beds (M&A 2009; Figure 3). Common fauna associated with shallow bay mud habitat include tube dwelling anemones, arthropods (e.g., ghost shrimp, *Callianassa*), round stingray (*Urobatis halleri*), barred and spotted sand bass (*Paralabrax nebulifer* and *P. maculatofasciatus*), and midshipman (*Porichthys myriaster*).

The placement of suitable dredge material at the NTC Channel could be designed to accommodate eelgrass habitat (to -5 ft [-1.5 m] MLLW); however, as depicted in Figure 3, meeting the mitigation requirements (7.22 acres) entirely within the NTC Channel may result in narrowing of the existing channel and potentially creating a navigational hazard.

HARBOR ISLAND – WEST BASIN

Adjacent to the NTC Channel, the west basin of Harbor Island displays a similar habitat regime (i.e., shoreline stabilized with rip-rap and adjacent subtidal bay mud habitat) (Figure 3). The average depth within the basin is approximately -10 to -12 ft (-3.0 to -3.7 m) MLLW, with extensive eelgrass beds in the northern portion and marina development along the south and eastern portions of the basin (M&A 2009; Figure 3). The placement of suitable dredge material at the Harbor Island – West Basin could be designed to accommodate eelgrass habitat (to -5 ft [-1.5 m] MLLW); however, similar to the NTC Channel, meeting the mitigation requirements (7.22 acres) entirely within the basin may result in narrowing of the existing channel and potentially creating a navigational hazard (Figure 4).

ADJACENT TO CONVAIR LAGOON

Adjacent to Convair Lagoon and proposed CDF, the area displays a similar habitat regime (i.e., shoreline stabilized with rip-rap and adjacent subtidal bay mud habitat) (Figure 3). The average depth in the area is approximately -10 to -12 ft (-3.0 to -3.7 m) MLLW, with eelgrass beds just offshore of the Coast Guard facility, and patchy eelgrass located further offshore (M&A 2009; Figure 3). The placement of suitable dredge material could be designed to accommodate eelgrass habitat (to -5 ft [-1.5 m] MLLW); however, similar to the NTC Channel, meeting the mitigation requirements (7.22 acres) entirely in the area may result in potentially creating a navigational hazard (Figure 3).

A-8 ANCHORAGE

A-8 Anchorage is a 65 acre (26 ha) area adjacent to the Sweetwater Channel and was the only long-term free anchorage area available on the west coast (Figure 4). In June 2006, the San Diego Board of Port Commissioners authorized the closure of the A-8 Anchorage, and complete

Figure 3. Potential Eelgrass Mitigation Sites for Convair Lagoon CDF Alternative, North Ecoregion.

Figure 4. Potential Eelgrass and Bay Fill Mitigation Sites for Convair Lagoon CDF Alternative.

closure occurred on October 1, 2008. The water depth within the A-8 Anchorage ranges from -10 to -12 ft (-3.0 to -3.7 m) MLLW, and the substrate generally consists of soft-bottom mud habitat. The area does not currently support eelgrass (M&A 2009). The soft mud-bottomed site has been the focus of extensive debris mapping and clean up (M&A 2006). In general the site lacks substantive marine epibenthic activity although sunken vessel hulls provide hard structure and relief that supports a greater aggregation of fish and invertebrates than the otherwise featureless bottom. The site supports use by a typical suite of fish found in the bay. Barred sand bass are relatively common around the sunken vessel hulls, *Sargassum* growing on the hulls supports use by giant kelpfish. Opaleye are found in small schools around a few portions of the site. Pacific seahorse is also represented in the hard structure debris fields. The placement of suitable dredge material at the A-8 Anchorage could be designed to accommodate eelgrass habitat (to -5 ft [-1.5 m] MLLW). In addition, the site would absorb even greater volumes to expand eelgrass habitat over a considerably larger area of the anchorage to create a mitigation bank site and larger dredged material beneficial reuse area.

SOUTH BAY BORROW SITE

As mitigation for eelgrass impacts from the National City Marine Terminal Extension Project, an existing approximately 20 acre (8.1 ha) sediment borrow pit within south San Diego Bay was partially filled with sandy material to create a suitable eelgrass mitigation area (Figure 4). Filling the borrow pit was intended to raise the bay bottom to elevations similar to those around the upper edge of the pit and within the depth ranges to support eelgrass growth (to -5 ft [-1.5 m] MLLW). The eelgrass mitigation area was completed in early 2004. Investigations of the site following construction indicated that most of the borrow pit was filled to elevations of -6 ft (-1.2 m) MLLW, although there were several areas where the depths were greater than -9 ft (-2.7 m) MLLW (M&A 2004).

The additional eelgrass Mitigation Bank site was approximately 7.5 acres (3.0 ha) and was created north of the eelgrass mitigation site within the backfilled borrow area. The Mitigation Bank site was planted using a series of planting transects, spaced 4 meters apart, within the roughly rectangular sited using a bare-root bundle approach with planting units being placed on 2-meter centers.

Routine monitoring conducted in the area of the borrow pit in February 2006, shortly before the 24-month monitoring period, revealed that the transplant site was performing poorly and signaled the need for a supplemental transplant (M&A 2006). Additional planting was completed in May 2006 and was subsequently surveyed for eelgrass coverage and density at the 24-month post-transplant mark. During the 36-month monitoring survey, a total of 0.03 acres (113 m^2) of eelgrass was mapped within the control site, but there was no eelgrass identified within either the Mitigation Bank Site or the Mitigation Site (M&A 2007). Eelgrass within the Control Site exhibited a 95% decline from that observed during May 2006 while eelgrass disappeared from both the Mitigation Bank Site and Mitigation Site. Notably, eelgrass was nearly absent from much of the central South Bay region including areas surrounding the restoration site and well away from the area. Since this site suffered significant eelgrass losses coincident with similar declines throughout the South Bay and although natural declines in reference control beds have kept the transplants in this site, compliant with the SCEMP requirements, the site is not performing as desired at the present time. However, future efforts and a change in environmental conditions may allow the eelgrass to establish and then serve its intended purpose.

GRAND CARIBE ISLE

The Grand Caribe Isle is located on South Grand Caribe Isle in the Coronado Cays (Figure 4). The South Grand Caribe Isle site is a disturbed upland area that would be regraded to accommodate wetland, intertidal marsh, and subtidal habitat (Figure 5). This area is located adjacent to a small passive use native plant park and has recently been used as a borrow site for sediment cap sand for the former Campbell Shipyard sediment remediation project. This site is expected to able to accommodate up to six and a half acres of wetland mitigation. This site is the only potential mitigation site where conceptual restoration designs have been developed and created habitat estimates provided for three conceptual designs (Figure 6 and Tables 1 and 2).

Table 1. Habitat Created for Potential Design Options at Grand Caribe Isle.

Option	Intertidal Acres (m^2)	Shallow Subtidal Acres (m^2)	TOTAL Acres (m^2)
Existing	2.37 (9,660)	0.38 (1,538)	2.75 (11,198)
Option 1	5.77 (23,350)	2.53 (10,239)	8.30 (33,589)
Option 2	4.44 (17,968)	2.63 (10,643)	7.07 (28,611)
Option 3	4.56 (18,454)	4.18 (16,916)	8.74 (35,370)

Table 2. Breakdown of Habitat Types (Acres) for Potential Design Options at Grand Caribe Isle.

Concept	Open	Mudflats	Low	Middle Marsh	High Marsh	Supra Tidal	TOTAL
Existing	0.0	0.78	0.055	0.62	0.54	8.58	11.07
Option 1	0.62	1.91	2.64	2.46	0.67	2.76	11.06
Option 2	0.92	1.71	2.72	0.82	0.90	3.96	11.03
Option 3	1.87	2.31	1.98	1.75	0.83	2.30	11.04

The following is a summary of biological site conditions from a biological baseline survey conducted by Merkel & Associates (2002) and subsequent review of the site, post-borrow site use in 2009. The Grand Caribe Isle study area encompassed approximately 10 acres of land and adjacent intertidal areas and is part of a low-lying peninsular fill surrounded by San Diego Bay. The man-made isle was created using dredged fill from the Bay during a time when construction of finger channels and waterside development was underway for the Coronado Cays. The site elevation ranges from subtidal conditions around the eastern, southern, and western edges of the peninsula to a high elevation of approximately 13 ft (4.0 m) MLLW on a small hummock near the eastern edge of the existing borrow site excavation.

The on-site soil consists of loamy sand from marine deposits. The Bay surrounds the site, with the peninsular connection being isolated from other native upland habitats by residential development of the Coronado Cays.

The biological resources on the site are dominated by common, widely distributed species, many of which are representative of disturbed lands (M&A 2002). The borrow project served as a stage 1 lowering of the site towards an eventual excavation to intertidal and subtidal habitat restoration. An erosion control seed mix including grasses and a number of fast growing ground covers such as lupines was hydroseeded into the borrow site following completion of the Campbell site use. Species well represented on the site include salt heliotrope (*Heliotropium curvassavicum*), slender-leaved

Figure 5. Existing Conditions at Grand Caribe Isle Mitigation Site.

Figure 6. Conceptual Design for Grand Caribe Isle Mitigation Site.

iceplant (*Mesembryanthemum nodiflorum*), garland (*Chrysanthemum coronarium*), and red-stem filaree (*Erodium cicutarium*).

At present, habitat functions and values are considered degraded on the isle due to the limited size of the habitat area and the lack of developed habitat features. Very limited salt marsh habitat is present along the fringes of the island; however, it is not expected to expand given the lack of available tidal environment. No substantial existing habitat features exist within the Grand Caribe Isle site and no sensitive species or other biological resources are believed to make regular or significant use of this site in its current form. However, the site is not large enough to meet all of the potential mitigation requirements for the proposed project, and therefore, if this site were selected, mitigation must occur at an additional location or locations.

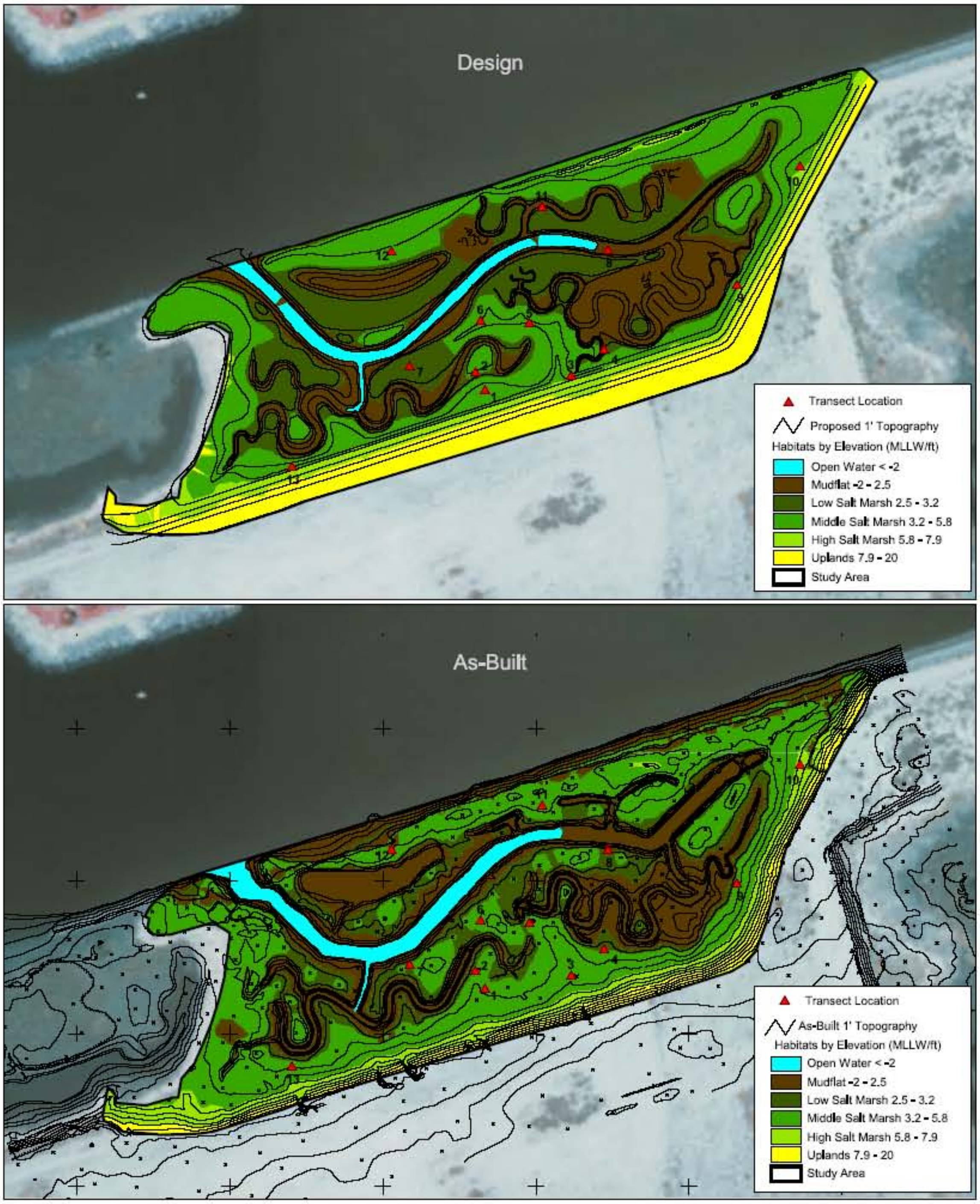
D STREET FILL

Another potential mitigation site is located on the D Street Fill, immediately south of the NCMT across the Sweetwater River channel (Figure 4). A little over six acres of the D Street Fill site could be converted by altering the existing topography to create favorable hydrologic conditions to accommodate saltwater marsh plants, intertidal mudflats, and shallow subtidal habitats. No conceptual plan for D Street Fill has been developed; however, it is anticipated that a design similar to the previous mitigation design developed and implemented for the first phase of the NCMT wharf expansion will be created to meet the mitigation requirements of the proposed project (Figure 7).

The proposed mitigation site is routinely cleared/disked in an effort to provide nesting habitat for the California least tern (*Sterna antillarum browni*). As a result, the area is mostly devoid of vegetation. Plant species that occur are limited to native and non-native species that are typical of disturbed sandy soils found in the area. These species include opportunistic native species such as woolly lotus (*Lotus heermannii* var. *heermannii*), salt heliotrope, beach evening primrose (*Camissonia cheiranthifolia* ssp. *suffruticosa*), coyote brush (*Baccharis pilularis*), coast woollyheads (*Nemacaulis denudata* var. *dunudata*), and fragrant everlasting (*Pseudognaphalium beneolens*). Non-native plant species include hottentot-fig (*Carpobrotus edulis*), slender-leaved iceplant, garland, pineapple weed (*Amblyopappus pusillus*), and red-stem filaree.

Bird species that utilize this area for foraging and/or nesting include horned lark (*Eremophila alpestris*); Northern rough-winged swallow (*Stelgidopteryx serripennis*); and during the winter, American pipet (*Anthus rubescens*) (pers.com Robert Patton). The gull-billed tern (*Sterna nilotica*), a species that predates on California least tern young, is also known to forage over the site. During the survey, California least terns were exhibiting nesting behavior immediately west of the proposed mitigation site.

Similar to Grand Caribe, the D Street Fill site is not large enough to meet all of the potential mitigation requirements for the proposed project, and therefore, if this site were selected, mitigation must occur at an additional location or locations.



Habitat by Elevation	Elevation Range (ft/MLLW)	As-Built Area	Proposed Area	% Difference
open water	< -2	0.24	0.20	1.20
mudflat	-1.99 - 2.5	2.07	1.55	1.34
low salt marsh	2.5 - 3.2	0.96	1.35	0.71
middle salt marsh	3.2 - 5.8	2.27	2.00	1.14
high salt marsh	5.8 - 7.9	0.39	0.33	1.18
uplands	> 7.9	0.50	0.99	0.51

Figure 7. As-Built Specifications for D Street Mitigation Site.

EMORY COVE CHANNEL

Emory Cove, an inlet in the southwest corner of San Diego Bay served as an anchorage until 1987 when the Port District began enforcing rules making it unlawful to anchor, moor, make fast to the bottom, strand or ground (any) vessel or structure within South San Diego Bay, including Emory Cove. The Emory Cove anchorage was subsequently cleaned up in the early 1990s. The channel approaching Emory Cove is slightly deeper (approximately -10 ft [3 m] MLLW) than the adjacent area that supports extensive eelgrass beds. The placement of suitable dredge material could be designed to accommodate eelgrass habitat (to -5 ft [-1.5 m] MLLW), mimicking the surrounding area. While it may also pose a navigational hazard, the area in not heavily traveled by vessels, and as noted, the surrounding areas currently consist of shallow, eelgrass bed. In addition, the area is large enough to meet the entire mitigation requirement (7.22 acres) (Figure 8).

SOUTH BAY POWER PLANT

The South Bay Power Plant (SBPP) is a non-operational electric power generating facility located on the southeastern shoreline of San Diego Bay (Figure 8). When it was in operation, the SBPP used bay water for once-through condenser cooling that was withdrawn from San Diego Bay via an intake channel north of the Chula Vista Wildlife Refuge. The intake channel is about 600 ft (180 m) in length, has a bottom width of about 200 ft (60 m) at its widest point, and tapers to 50 ft (15 m) width near the Unit 4 screenhouse (Duke Energy 2004). The maximum depth of the channel is approximately 18 ft (5.4 m) MLLW. Upon exiting the condensers, warmed cooling water from the SBPP was carried through discharge pipes about 450 ft (137 m) to the discharge basin located at the head of the discharge channel. The discharge channel originates on the side of the jetty, opposite the head of the intake channel.

The aquatic habitats in the vicinity of the SBPP are characteristic of protected inshore marine environments (Navy and SDUPD 2010). The flora and fauna of the region consists of communities living above, on, and within soft benthic substrates. Benthic substrates are composed mostly of alluvial sediments, including fine-grained sand, silt, and clay. Some expanses of bottom along the western shoreline of the bay, however, are dominated by larger-grained sand. Because of the absence of freshwater inflow, plant and animal communities are typical of marine and higher salinity estuarine environments. Aquatic habitats include subtidal areas, eelgrass beds, mudflats, and salt marshes.

South Bay Power Plant Intake Channel

The intake channel to the SBPP is located north of the Chula Vista Wildlife Refuge and consists of slightly deeper water (approximately -10 to -12 ft [-3.0 to -3.7 m] MLLW) than the surrounding areas that support extensive eelgrass beds (M&A 2009). The placement of suitable dredge material could be designed to accommodate eelgrass habitat (to -5 ft [-1.5 m] MLLW), mimicking the surrounding area. While it may also pose a navigational hazard, the area in not heavily traveled by vessels, and as noted, the surrounding areas currently consist of shallow, eelgrass bed. In addition, the area is large enough to meet the entire mitigation requirement (7.22 acres) (Figure 8).

Figure 8. Potential South Bay Mitigation Sites for Convair Lagoon CDF Alternative.

South Bay Power Plant Intake and Discharge Entrance

The nearshore area of the SBPP consisting of the intake and discharge channel is another potential mitigation site that could serve an eelgrass mitigation site, as well as, as bay fill mitigation site (Figure 8). The area is bounded with dikes and the existing habitat includes mudflats and shallow subtidal habitat, with eelgrass present along the northern intake channel (M&A 2009). Like other potential eelgrass mitigation sites, the placement of suitable dredge material could be designed to accommodate eelgrass habitat (to -5 ft [-1.5 m] MLLW). In addition, the placement of dredge or fill material at higher elevations could also be used to create tidal land or marsh habitat, that would create a linkage between existing tidal habitat to the north with the Salt Works to the south.

SALT WORKS

Marsh lands around the mouth of the Otay River in the shallow, south end of San Diego Bay were converted to salt evaporation ponds in the late 1800s (Figure 8). Over the past century, various internal berms have been constructed, repaired, and removed by operational changes and flooding. These changes have resulted in changing topographic conditions that make a continued discussion of distinct pond cells.

The salt ponds consist of shallow, open water cells of different salinity levels interspersed with mudflats, dry dikes, and salt marsh. The salt pond levees consist primarily of unvegetated uplands. The lack of vegetation on many of the levee tops is the result of ongoing maintenance activities associated with the salt operation, as well as the high salinities that exist in the vicinity of the levees (USFWS 2006). The nature of the salt extraction process has facilitated use of this artificial habitat by many shorebirds, sea birds, and waterfowl. It represents one of the few large feeding, roosting, and nesting areas remaining along the urbanized southern California coast. The San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan (USFWS 2006) summarized use of the Salt Works by sensitive birds. The levees provide relatively secluded nesting habitat for thousands of breeding terns and black skimmers, as well as black-necked stilts, American avocets, and western snowy plovers.

Covering approximately 1,451 acres (587 ha), the salt ponds produce sodium chloride and magnesium chloride for industrial use. Primary ponds are approximately 3 ft (1 m) deep at their center, and are the least salty, representing the first stage of the extraction process. Secondary ponds are up to 5 ft (2 m) deep. These ponds are slightly more saline than seawater and are used for commercial brine shrimp production. Pickling ponds have the second-highest salinities. The final step in the extraction process occurs in crystallizer ponds, which support the highest salinity levels. The evaporation process takes 12 to 18 months, depending on rainfall, with each crystallization pond harvested once per year. Brine shrimp thrive in the secondary system; shrimp eggs hatch beginning in mid-May and mature shrimp are collected through mid-December. These are harvested commercially. Most birds use the southern side of these secondary ponds.

The USFWS is proposing to restore portions of the salt ponds to the historic habitats of intertidal mudflat and coastal salt marsh, while retaining other ponds as managed water areas to support species that favor the brine invertebrates present in the current system. The plan would result in the restoration of up to 140 acres (57 ha) of intertidal salt marsh, freshwater wetland, and coastal sage scrub habitat within the Otay River floodplain. In addition, up to 410 acres (166 ha) of salt ponds would be restored to intertidal salt marsh habitat. The trade-off for these gains is a decreased potential habitat for shorebirds by reducing area of salt ponds by 145 to 440 acres (59 to 178 ha).

Nesting habitat for seabirds would be expanded by about 28 acres (11 ha). The increase in tidal wetlands is up to about 800 acres (324 ha).

POND 20

The Pond 20 site, located south of the Salt Works is defined by internal dikes that include three smaller pond cells (herein termed Ponds 20A, 20B, and 20C). Areas involved in the present study are the Port of San Diego-owned portions of Pond 20A and 20B, and encompasses approximately 92 acres (37 ha) (M&A 2008, Figure 8).

The western portion of Pond 20A may have historically supported middle to high salt marsh habitat in the 1800s, prior to its conversion near the turn of the last century for salt production. Historic aerial photographs of the area in the 1940s show some vestigial salt marsh south of Pond 20A immediately south of Palm Avenue in areas that have since been filled. The eastern portion of Pond 20A, immediately north of an off-site mobile home park, includes an area that retains long-ago isolated braided stream patterns associated with the historic mouth of Nestor Creek. Pond 20A was last regularly used as an evaporator pond in the 1940s with a failed subsequent effort in the 1960s to reintegrate the pond into the evaporator process of the salt works.

Pond 20 is isolated from tributary fresh or saltwater surface input and experiences occasional storm runoff from the internal pond basin and a roadway surface drain from Palm Avenue. Seasonally water levels in the pond fluctuate significantly and waters are strongly saline due both to the pond's history as a salt concentrator and the continued closed system evaporative processes occurring in the pond today. Years of drought and heavy rainfall influence the levels of standing water in the pond and the rates of fluctuation of water surface levels. At present, limited standing water is found along the lower-lying "channels" that parallel the dike and generally below a nearly complete salt crust. These deeper channels are believed to be borrow areas for the reconstruction and repair of the pond containment dikes. These channels also historically enhanced water collection for pumped transfers within the salt pond system.

The Lower Otay River runs through the USFWS National Wildlife Refuge (NWR) and is adjacent to Pond 20. Per the San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan (USFWS 2006), potential enhancement and restoration includes realigning the Otay River to a more natural configuration through Pond 20, and excavating 8 acres (3.2 ha) of freshwater-brackish pond, establish 44 acres (18 ha) of tidal salt marsh and channels, and 40 acres (16 ha) of willow-riparian woodland and mudflat riparian scrub.

SUMMARY

Since the final design for any of the mitigation sites has not been determined, it is not possible to determine specifically how much of the mitigation requirements can be met at each site. The capacity, considerations, and constraints to provide mitigation at each site is summarized in Table 3. While off-site locations (i.e., outside San Diego Bay) could be considered, it is generally believed that the agencies would require mitigation to occur somewhere in San Diego Bay. Collectively, the mitigation capacity of the potential sites within San Diego Bay exceeds the project need, and implementation of restoration projects of a similar nature and geography has been adequately demonstrated for past projects. However, given the scale of the impact, other decision-making factors must be considered.

Compensatory eelgrass mitigation would occur by raising the bayfloor elevation to approximately -5 ft (-1.5 m) MLLW with dredged/fill materials, and planting eelgrass on the elevated plateau. Generally, these projects occur in conjunction with a dredging project that can provide material to create the mitigation habitat; however, in this case, it is uncertain if any material would be available. This would require that sufficient suitable material from a separate dredging project were available. Assuming the water depth ranges from -10 to -12 ft (-3.0 to -3.7 m) MLLW at the proposed mitigation site, and if the target depth for eelgrass restoration is -5 ft (-1.5 m), approximately 60,000 to 80,000 cubic yards (45,000 to 63,000 cubic meters) of sediment would be necessary. Another consideration/constraint is the ability to mitigate within the North Ecoregion. The three proposed locations in the North Ecoregion (i.e., NTC Channel, Harbor Island, adjacent to Convair Lagoon) could individually meet the mitigation requirements; however, in doing so, other constraints surface and include potential navigation hazards in areas that can experience heavy vessel traffic, as well as, jurisdictional and property ownership. While it may be possible to create smaller footprints distributed over a larger area within the North Ecoregion, navigational and jurisdictional concerns may still persist. In addition, construction of more numerous, smaller sites may also be more logistically challenging and costly. Therefore, it may be likely that eelgrass mitigation would occur in an adjacent ecoregion, where a variety of potential mitigation sites exist that may have fewer constraints. As noted in the introduction, consultation with regulatory and resource agencies would be required prior to pursuing a mitigation option.

For the Bay Fill and Offset Mitigation, the identified mitigation sites share similar characteristics for restoration. This includes removal and disposal or reuse of historic fills, grading the site to a desired hydrologic condition of channels, subtidal basins, and intertidal flats to support desired compensatory habitat, and planting pilot vegetation plots to allow for natural expansion of marshland vegetation. Similar to previous restoration designs, the created salt marsh habitats would include deeper main tidal channels and areas that provide soft bottom intertidal and shallow subtidal habitats for foraging waterbirds. The remainder of the area would be allowed to become salt marsh to provide greater structural diversity and enhanced habitat value. The recommended approach is to create a grade that is similar to that occurring in the restored D Street Fill marsh, which is dominated by mudflats and low to middle elevation coastal salt marsh. The site also supports some eelgrass within the deeper channels.

The proposed creation of habitat would be expected to provide habitat values that would be as productive or more productive than the intertidal and shallow subtidal habitats affected by the proposed project. Development of each mitigation site is expected to be completed within 4 to 6 months of field construction and restoration planting activities with the excavated material being hauled for disposal or reuse at various material placement sites. Grading would be restricted to a construction window outside of the nesting season for snowy plover and least terns for the D Street Fill, Salt Works, or Pond 20 sites. Similar restrictions may not occur for construction of the Grand Caribe, site. Another consideration is that the mitigation requirements could be met entirely at the SBPP, Salt Works, or Pond 20 sites, while the Grand Caribe and D Street Fill sites do not individually meet the mitigation requirements.

Table 3. Summary of Potential Mitigation Sites.

Mitigation Site	Locational Criteria	Mitigation Requirement	Available Acreage for Mitigation	Meet Entire Mitigation Requirement	Constraints/Considerations
Eelgrass Mitigation Sites					
NTC Channel	Same Ecoregion (North)	SCEMP Requirement 7.22 acres (2.92 ha)	>7.22 acres (2.92 ha)	Yes	Requires large quantity of suitable dredge/fill material to create habitat. Uncertain of source Potential navigational hazard if implemented Verify property ownership
Harbor Island	Same Ecoregion (North)	SCEMP Requirement 7.22 acres (2.92 ha)	>7.22 acres (2.92 ha)	Yes	Requires large quantity of suitable dredge/fill material to create habitat. Uncertain of source Potential navigational hazard if implemented Verify property ownership
Adjacent to Convair Lagoon	Same Ecoregion (North)	SCEMP Requirement 7.22 acres (2.92 ha)	>7.22 acres (2.92 ha)	Yes	Requires large quantity of suitable dredge/fill material to create habitat. Uncertain of source Potential navigational hazard if implemented Verify property ownership
A-8 Anchorage	Adjacent Ecoregion (South-Central)	SCEMP Requirement 7.22 acres (2.92 ha)	65 acres (23 ha)	Yes	Requires large quantity of suitable dredge/fill material to create habitat. Uncertain of source Uncertain performance
South Bay Borrow Site	Adjacent Ecoregion (South)	SCEMP Requirement 7.22 acres (2.92 ha)	7.5 acres (3.0 ha)	Yes	Requires large quantity of suitable dredge/fill material to create habitat. Uncertain of source Poor historical performance
South Bay Power Plant Channel	Adjacent Ecoregion (South)	SCEMP Requirement 7.22 acres (2.92 ha)	13.5 acres (5.5 ha)	Yes	Requires large quantity of suitable dredge/fill material to create habitat. Uncertain of source Uncertain performance
Emory Cove Channel	Adjacent Ecoregion (South)	SCEMP Requirement 7.22 acres (2.92 ha)	>7.22 acres (2.92 ha)	Yes	Requires large quantity of suitable dredge/fill material to create habitat. Uncertain of source Uncertain performance
South Bay Power Plant	Adjacent Ecoregion (South)	SCEMP Requirement 7.22 acres (2.92 ha)	17.3 acres (7.0 ha)	Yes	Requires large quantity of suitable dredge/fill material to create habitat. Uncertain of source Uncertain performance
Bay Coverage and Fill Offset Mitigation Sites					
D Street Fill	Adjacent Ecoregion (South)	Open Water - 9.84 acres (3.98 ha) Coastal Salt Marsh - 0.44 acres (0.18 ha) Intertidal – 4.01 acres (1.63 ha) Shallow Subtidal – 4.49 acres (1.82 ha)	6.2 acres (2.5 ha)	No	Cannot meet entire mitigation requirement, therefore must combine with other location(s) Similar work has been performed on past occasions Coincides with NWR goals for the South San Diego Bay Unit of the San Diego NWR Construction limited to non-breeding season for birds
Grand Caribe	Adjacent Ecoregion (South)	Open Water - 9.84 acres (3.98 ha) Coastal Salt Marsh - 0.44 acres (0.18 ha) Intertidal – 4.01 acres (1.63 ha) Shallow Subtidal – 4.49 acres (1.82 ha)	6.5 acres (2.6 ha)	No	Cannot meet entire mitigation requirement, therefore must combine with other location(s) Project would be in an area already identified for use for wetland mitigation purposes Existing conceptual grading plans exist and partial sediment removal was already performed by Port in a borrow operation
South Bay Power Plant	Adjacent Ecoregion (South)	Open Water - 9.84 acres (3.98 ha) Coastal Salt Marsh - 0.44 acres (0.18 ha) Intertidal – 4.01 acres (1.63 ha) Shallow Subtidal – 4.49 acres (1.82 ha)	17.3 acres (7.0 ha)	Yes	Requires large quantity of suitable dredge/fill material to create habitat. Uncertain of source Construction limited to non-breeding season for birds Property ownership
Salt Works	Adjacent Ecoregion (South)	Open Water - 9.84 acres (3.98 ha) Coastal Salt Marsh - 0.44 acres (0.18 ha) Intertidal – 4.01 acres (1.63 ha) Shallow Subtidal – 4.49 acres (1.82 ha)	1,451 acres (587 ha)	Yes	Various conceptual plans already prepared Construction limited to non-breeding season for birds Property ownership
Pond 20	Adjacent Ecoregion (South)	Open Water - 9.84 acres (3.98 ha) Coastal Salt Marsh - 0.44 acres (0.18 ha) Intertidal – 4.01 acres (1.63 ha) Shallow Subtidal – 4.49 acres (1.82 ha)	92 acres (37 ha)	Yes	Easy restoration with potential for material reuse or disposal locally Construction limited to non-breeding season for birds Property ownership

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APPENDIX K

CONVAIR LAGOON ARCHITECTURAL RESOURCES EVALUATION AND ASSESSMENT OF EFFECTS

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THE CONVAIR LAGOON ARCHITECTURAL RESOURCES EVALUATION AND ASSESSMENT OF EFFECTS IS ON FILE AT THE SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD.

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APPENDIX L

GEOLOGY AND SOILS EVALUATION SHIPYARD SEDIMENT ALTERNATIVE ANALYSIS CONVAIR LAGOON

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GEOLOGY AND SOILS EVALUATION
SHIPYARD SEDIMENT
ALTERNATIVE ANALYSIS
CONVAIR LAGOON
SAN DIEGO, CALIFORNIA

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120 Birmingham Drive, #110
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May 27, 2011
Project No. 106997002

May 27, 2011
Project No. 106997002

Ms. Wentzelee Botha
Brown & Winters
120 Birmingham Drive, #110
Cardiff By The Sea, California 92007

Subject: Geology and Soils Evaluation
Shipyard Sediment Alternative Analysis
Convair Lagoon
San Diego, California

Dear Ms. Botha:

In accordance with your request and authorization, we have performed a geology and soils evaluation for the Shipyard Sediment Alternative Analysis for the Convair Lagoon project. The project proposes to dispose of contaminated dredge materials to a confined disposal facility to be constructed at Convair Lagoon in San Diego Bay. The attached report presents our methodology, findings, opinions, and recommendations regarding the geology and soils conditions at the site.

We appreciate the opportunity to be of service on this project.

Respectfully submitted,
NINYO & MOORE

Emil Rudolph, GE
Senior Engineer

Jonathan Goodmacher, CEG
Manager/Principal Geologist

PROFESSIONAL GEOLOGIST
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Distribution: (1) Addressee

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EXECUTIVE SUMMARY

The Convair Lagoon Alternative site consists of approximately 15 acres of water and land located within the San Diego Bay in the City of San Diego, California. The site is bounded by the San Diego Bay to the south; North Harbor Drive, a greenway, and the San Diego International Airport to the north; the United States North Harbor Drive Coast Guard Facility (U.S. Coast Guard Station) to the east; and a rental car parking lot to the west. A concrete pier extends into the lagoon from the northern shoreline and asphalt-paved dock. Several municipal storm drains outlet into the lagoon from the northwest and northeast margins of the lagoon and from beneath the pier. These include a 60-inch diameter, a 54-inch diameter, and two 30-inch diameter pipeline outlets on the northern shoreline, as well as three smaller outlets on the western shore of the lagoon. The storm drain outlets are protected by energy dissipaters consisting of concrete erosion control mattresses and rock riprap. The elevation of the project site ranges from approximately 10 feet above mean lower low water (MLLW) at its northern end to -15 feet below MLLW on the floor of the lagoon.

The Convair Lagoon Alternative involves the construction of a confined disposal facility (CDF) for the placement of contaminated marine sediment dredged from the Shipyard Sediment Site. A rock jetty confinement barrier will extend the general shoreline of the adjacent rental car facility and will contain the fill material placed during earthwork operations.

Geologic and geotechnical constraints evaluated for the project include:

- The site is underlain by fill material and bay deposits, and underlain at depth by Pleistocene-age old paralic deposits. The fill includes material placed as part of a capping operation in the 1990s. Recent bay sediments, deposited along the edges of San Diego Bay, underlie the fill. Geotechnical constraints related to soils at the project are:
  - *Hydrocollapse* – Exposed existing site soils and proposed fill materials within and overlying the zone of fluctuating groundwater may be subject to hydrocollapse.
  - *Soft Ground* – Soft ground or loose soils are expected to be present at the project site.
  - *Expansive Soils* –Exposed and buried existing site soils may have a moderate to high potential for expansion. Dredged and imported fill materials are proposed to raise site grade. Based on our familiarity with the potential dredge source (San Diego Bay), granular materials are likely to be placed as fill. Further, capping import materials would likely be specified as granular, therefore the potential for near-surface expansive soils at the project is low.
  - *Compressible Soils* – The existing fill and bay deposits underlying the project are thought to consist of silty sand, silt, and sandy clay, which are considered compressible under loading.

  - *Fill Soils* – Existing fill soils placed without engineering supervision may be loosely or inadequately compacted, may contain oversize materials unsuitable for reuse in engineered fills, and may contain unsuitable organic or debris that may preclude their use in engineered fills.

- The closest known major active fault is the Rose Canyon Fault. Specifically, the Spanish Bight Fault, an element of the Rose Canyon Fault, intersects the southwestern boundary of the project. As a result, the western portion of the project area is within both a State of California-designated Earthquake Fault Zone (formerly known as an Alquist-Priolo Special Studies Zone) and a City of San Diego-designated fault zone. Geotechnical constraints related to faulting and seismic events at the project are:

  - *Ground Shaking* – The project has a high potential for strong ground motions due to earthquakes on adjacent and nearby active faults.

  - *Ground Surface Rupture* – Ground surface rupture due to active faulting is possible at the project due to the presence of the Spanish Bight Fault at the southwestern boundary of the project. Additionally, lurching or cracking of the ground surface as a result of nearby seismic events is possible.

  - *Liquefaction* – The soils underlying the project are expected to be subject to dynamic settlement or liquefaction during a seismic event on a nearby fault.

  - *Lateral Spread* – The existing exposed soils are expected to be subject to lateral spread during a seismic event on a nearby fault.

- Groundwater is expected at approximately 3 feet above MLLW level (approximately 9 feet below the proposed ground surface).

- The land to the west and east of the project is not designated as being subject to inundation during a tsunami event (California Geological Survey, 2009). However, the existing shoreline of the lagoon is designated as being at the tsunami inundation line. This line represents the maximum considered tsunami wave runup.

- Based on our review of published geologic literature, aerial photographs, and our site reconnaissance, no landslides or related features underlie or are adjacent the project and the potential for landslides is considered low.

- Based on review of Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), posted on the County of San Diego, San Diego Geographic Information Source (SanGIS) website (2004), the shore of the lagoon is within the 100-year flood.

- Based on review of dam inundation maps, significant flooding due to dam inundation is not expected to occur at the project.
- Due to the proximity of the project to the marine environment and the anticipated variability of the on-site soils, soils at the project should be treated as highly corrosive.

1. INTRODUCTION

In accordance with your request, Ninyo & Moore has completed an evaluation of geologic and soil conditions for the proposed Shipyard Sediment Alternative project (the project) located in northern portion of San Diego Bay (Figure 1).

Our evaluation is based on geologic reconnaissance, reviews of published and unpublished geologic and geotechnical reports, aerial photographs, in-house data, and our assessment of the potential geologic hazards the project. The purpose of this survey was to estimate the potential for impacts to the project from geologic or soils conditions on or in close proximity to the site, and to discuss measures that might be considered during project design to reduce or mitigate the potential impacts with respect to the development of the proposed project.

2. SCOPE OF SERVICES

Ninyo & Moore's scope of services for this geologic and soils evaluation included the activities listed below:

- Review of readily available regional, local, and site-specific geologic and geotechnical reports.
- Review of readily available background information including topographic, soils, mineral resources, geologic, and seismic and geologic hazard maps, and stereoscopic aerial photographs.
- Performance of a geologic reconnaissance of the site and vicinity.
- Compilation and analysis of the data obtained from our background reviews and site reconnaissance.
- Preparation of this report documenting findings and providing opinions and recommendations regarding possible geologic and soil impacts at the site. The findings were evaluated with respect to questions A through H listed in Section 6, "Geology and Soils" within Appendix G, "Environmental Checklist Form" of the "Guidelines for Implementation of the California Environmental Quality Act (CEQA)."

3. REGULATORY FRAMEWORK

Geologic resources and geotechnical hazards within the proposed project area are governed by the City of San Diego and the State of California. The City's Building Division plans contain conservation and safety elements for the evaluation of geologic hazards. The procedures for construction related earthwork and excavation are established by local grading ordinances developed by the City of San Diego Engineering Department. The site is also governed by the regulations of the California Code of Regulations (CCR) and the 2010 California Building Code (CBC) adopted by the City of San Diego in 2011.

The CBC is promulgated under CCR, Title 24, Parts 1 through 12, also known as the California Building Standards Code, and is administered by the California Building Standards Commission (CBSC). The CBSC is responsible for administering California's building codes.

The Surface Mining and Reclamation Act of 1975 (SMARA) was enacted to promote conservation of the State's mineral resources and to ensure adequate reclamation of lands once they have been mined. Among other provisions, SMARA requires the State Geologist to classify land in California for mineral resource potential. The four categories include: Mineral Resource Zone MRZ-1, areas of no mineral resource significance; MRZ-2, areas of identified mineral resource significance; MRZ-3, areas of undetermined mineral resource significance; and MRZ-4, areas of unknown mineral resource significance. The distinction between these categories is important for land use considerations.

4. SITE DESCRIPTION AND HISTORY

The following sections summarize the sit location, description, and background:

4.1. Site Location

The Convair Lagoon Alternative site consists of approximately 15 acres of water and land located within the San Diego Bay in the City of San Diego, California. The site is bounded by the San Diego Bay to the south; North Harbor Drive, a greenway, and the San Diego International Airport to the north; the United States North Harbor Drive Coast Guard Facility (U.S. Coast Guard Station) to the east; and a rental car parking lot to the west (Figure 1). The site is within the jurisdiction of the San Diego Unified Port District (District) and is located in Planning District 2 (Harbor Island/Lindbergh Field), Planning Subarea 24 (East Basin Industrial) of the 2010 Port Master Plan.

4.2. Site Description

The Convair Lagoon Alternative site is an area of the San Diego Bay that consists of open water, submerged facilities, and land. The land facilities on the Convair Lagoon Alternative site are located along the periphery, with the exception of the southern boundary, which is San Diego Bay. Land facilities include an asphalt paved area along the northern boundary, parallel to North Harbor Drive; a concrete seawall or rip-rap located along the north, east, and west shorelines; and an abandoned concrete sea plane marine ramp located along the southwesterly interface between the land and water. The western and northwestern part of the site is a rental car parking lot.

The submerged facilities on the Convair Lagoon Alternative site include a sand cap, rock berm, and storm drains. The submerged area of the site includes an approximate 7-acre sand cap that was designed to isolate sediment contamination associated with former Teledyne Ryan Aeronautical operations. In addition to the sand cap, submerged facilities on the site include a subsurface rock berm and multiple submerged storm drains. The submerged rock berm transects the site from the northwest corner to the southeast corner in an “L” shape to contain the existing sand cap. On the northern shoreline, a 60-inch diameter storm drain, a 54-inch diameter storm drain, and two 30-inch diameter storm drains outlet into the lagoon. The two 30-inch diameter storm drains, which served the former Teledyne Ryan facility, are abandoned in place. On the western shoreline, three smaller storm drains outlet into the lagoon.

The adjacent surrounding areas consist of a greenway with a bicycle path is located to the north, parallel to North Harbor Drive. Directly west of the site is a rental car parking lot, while to the east is the U.S. Coast Guard Station. The San Diego Bay and a boat anchorage area (Anchorage A-9) are located to the south of the site.

4.3. Background

The surrounding shoreline of Convair Lagoon was previously shallow portions of the San Diego Bay that were filled with dredge sediment. The earliest information regarding dredging and fill operations in the vicinity of the alternative site is from 1921, when the northeastern shoreline of the bay was between present-day Pacific Highway and California Street. In the 1920s and 1930s, the area north of present-day West Laurel Street and North Harbor Drive, encompassing the eastern portion of the present-day San Diego Airport, was filled with material dredged from the bay. A dredging pipeline, (later converted to a 54-inch reinforced concrete storm drain), extended from the northern portion of the filled land, south to the bay, and discharged into the Convair Lagoon. In the mid-1930s, dredging operations filled the area where the U.S. Coast Guard Station is located east and adjacent to the alternative site. By 1939, a concrete pier was constructed above the previously mentioned storm drain on the site. In the early 1940s, dredging operations filled the area west of the site. Convair Lagoon is the unfilled area between the U.S. Coast Guard Station and the filled area to the west of the site. Throughout the years, multiple improvements to the site have been constructed and removed, including additional storm drains and other piers.

On October 17, 1986, the San Diego Regional Water Quality Control Board (San Diego Water Board) Executive Officer issued "Cleanup and Abatement Order No. 86-92 for Teledyne Ryan Aeronautical near Lindbergh Field, San Diego County" for the discharge of polychlorinated biphenyl (PCBs), several trace metals, and volatile organic compounds to the storm drains on Teledyne Ryan Aeronautical property and to the Convair Lagoon portion of the San Diego Bay. Cleanup and Abatement Order (CAO) 86-92, as amended, required Teledyne Ryan Aeronautical to construct a sand cap on the San Diego Bay bottom in Convair Lagoon to isolate the existing sediment contamination within the lagoon from the environment.

In 1996, the PCB contamination in Convair Lagoon was remediated by the Convair Lagoon Capping Project. During the PCB remediation, the existing subsurface rock berm was constructed (Figure 2) and a sand cap was placed behind the rock berm. The majority of the existing sand cap is submerged, although construction of the cap converted approximately 1,400 square feet of an intertidal area to upland.

5. PROJECT DESCRIPTION

The Convair Lagoon Alternative involves the construction of a confined disposal facility (CDF) for the placement of contaminated marine sediment dredged from the Shipyard Sediment Site.

For a detailed project description, please reference the Alternative Description section in the Administrative Draft Program EIR, Shipyard Sediment Remediation Project, San Diego Bay.

6. GEOLOGY

The following sections present our findings relative to regional and site geology, geologic hazards (e.g., landslides or expansive soils), groundwater, faulting and seismicity, and agricultural soils.

6.1. Regional Geologic Setting

The project is situated in the coastal section of the Peninsular Ranges Geomorphic Province. This geomorphic province encompasses an area that extends approximately 900 miles from the Transverse Ranges and the Los Angeles Basin south to the southern tip of Baja California (Norris and Webb, 1990). The province varies in width from approximately 30 to 100 miles. In general, the province consists of rugged mountains underlain by Jurassic-age metavolcanic and metasedimentary rocks, and Cretaceous-age igneous rock of what is known as the southern California batholith. The westernmost portion of the province in San Diego County, which includes the project, consists generally of a dissected coastal plain underlain by Upper Cretaceous-, Tertiary-, and Quaternary-age sediments.

The Peninsular Ranges Province is traversed by a group of sub-parallel faults and fault zones trending roughly northwest. Several of these faults are major active faults. The project area, like much of San Diego, is located near the active Rose Canyon fault zone. The Elsinore, San Jacinto, and San Andreas faults are major active fault systems located northeast of the study area and the Coronado Bank, San Diego Trough, and San Clemente faults are active faults located west of the project. Major tectonic activity associated with these and other faults within this regional tectonic framework consists primarily of right-lateral, strike-slip movement.

6.2. Site Geology

Based on our background review and knowledge of the vicinity, the site is underlain by fill material and bay deposits. These are expected to be underlain by Pleistocene-age old paralic deposits (Figure 3). The fill includes sand fill material placed as part of a capping operation in the 1990s (SAI Engineering, 1996). Recent bay sediments, deposited along the edges of San Diego Bay, are expected to underlie the fill. These materials typically consist of interlayered dark gray, wet to saturated, very loose to loose, silty fine sand and silt, and soft, sandy clay, which are considered compressible under new loading.

6.3. Groundwater

Sources provided by the California Department of Water Resources (DWR) and the California State Water Resources Control Board (SWRCB) were reviewed for information pertaining to groundwater quality and occurrence in the vicinity of the project. Data from groundwater monitoring wells placed at the northern edge of the project for the adjacent Teledyne Ryan project indicate that groundwater is present at approximately mean sea level (Geosyntec, 2010). This corresponds to an elevation of approximately 3 feet above mean lower low water (MLLW). Fluctuations in the groundwater level may occur due to variations in tidal fluctuations, ground surface topography, subsurface geologic conditions and structure, rainfall, irrigation, and other factors.

According to the SWRCB Water Quality Control Plan for the San Diego Basin, the land surrounding the project is located within the Lindbergh Hydrologic Subarea within the San Diego Mesa Hydrologic Area within the Pueblo San Diego Hydrologic Unit. This hydrologic area has been exempted by the Regional Board from the municipal drinking water use designation (SWRCB, revised 2007).

6.4. Faulting and Seismicity

The subject site is considered to be in a seismically active area. The closest known major active fault (i.e., a fault that exhibits evidence of ground displacement within the last 11,000 years) is the Rose Canyon Fault. The Rose Canyon Fault is capable of generating a maximum moment magnitude earthquake of 7.2 (Cao et al., 2003). Figure 4 shows the approximate location of the site with respect to the regional active faults.

As shown on Figures 5 and 6 the western portion of the project is located within a State of California-designated Earthquake Fault Zone (formerly known as an Alquist-Priolo Special Studies Zone) and a City of San Diego designated fault study zone. The element of the Rose Canyon fault intersecting that portion of the site is known as the Spanish Bight Fault strand. It is recognized as active and trends north towards the site through San Diego Bay and intersects the southwestern boundary of the project.

In general, hazards associated with seismic activity include strong ground motion, ground surface rupture, liquefaction, lateral spread, and tsunamis. These hazards are discussed in the following sections.

6.4.1. Strong Ground Motion

The 2010 California Building Code (CBC) (CBSC, 2010) recommends that the design of structures be based on the peak horizontal ground acceleration having a 2 percent probability of exceedance in 50 years which is defined as the Maximum Considered Earthquake (MCE). The statistical return period for PGA_{MCE} is approximately 2,475 years. The Design Earthquake (PGA_{DE}) corresponds to two-thirds of the PGA_{MCE}. The site modified PGA_{MCE} was estimated to be 0.63g using the United States Geological Survey (USGS, 2011) ground motion calculator (web-based) and the corresponding PGA_{DE} for the site is 0.42g.

As noted, the nearest known active fault is the Spanish Bight Fault, an element of the Rose Canyon Fault, which intersects the southwestern boundary of the project. Table 1 below lists principal known active faults that may affect the subject site, the maximum moment magnitude (M_{max}) and the fault types as published for the CGS by Cao et al. (2003). The approximate fault to site distance was calculated by the computer program FRISKSP (Blake, 2001).

Table 1 – Principal Active Faults

Fault	Approximate Distance miles (km)[1]	Maximum Moment Magnitude (M_{max})[1]	Fault Type[2]
Spanish Bight	0 (0)	7.2	B
Rose Canyon	0.7 (1.2)	7.2	B
Coronado Bank	12 (20)	7.6	B
Newport-Inglewood (Offshore)	33 (53)	7.3	B
Elsinore (Julian Segment)	42 (67)	7.1	A
Elsinore (Temecula Segment)	46 (74)	6.8	A
Earthquake Valley	47 (76)	6.5	B
Elsinore (Coyote Mountain Segment)	51 (82)	6.8	A
Palos Verdes	58 (94)	7.3	B

Notes:
[1] Cao, et al., 2003.
[2] California Building Code (CBC), 2010; Cao, et al., 2003.

6.4.2. Ground Surface Rupture

Ground surface rupture due to active faulting is possible at the project due to the presence of the Spanish Bight Fault at the southwestern boundary of the project. Additionally, lurching or cracking of the ground surface as a result of nearby seismic events is possible.

6.4.3. Liquefaction and Seismically Induced Settlement

Liquefaction is the phenomenon in which loosely deposited, saturated granular soils (located below the water table) with clay contents (particles less than 0.005 mm) of less than 15 percent, liquid limit of less than 35 percent, and natural moisture content greater than 90 percent of the liquid limit undergo rapid loss of shear strength due to development of excess pore pressure during strong earthquake-induced ground shaking. Ground shaking of sufficient duration results in the loss of grain-to-grain contact due to rapid rise in pore water pressure, and it eventually causes the soil to behave as a fluid for a short period of time. Liquefaction is known generally to occur in saturated or near-saturated cohesionless soils at depths shallower than approximately 50 feet below grade. Factors known to influence liquefaction potential include composition and thickness of soil layers, grain size, relative density, groundwater level, degree of saturation, and both intensity and duration of ground shaking.

Based on the relatively loose fill material and bay deposits expected to underlie the project, the presence of shallow groundwater, and knowledge from previous evaluations of liquefaction potential near the project (Ninyo & Moore, 2008, 2011), soils underlying the project may be subject to liquefaction and resulting settlement during a nearby seismic event.

6.4.4. Lateral Spread

Lateral spread of the ground surface during an earthquake usually takes place along weak shear zones that have formed within a liquefiable soil layer. Lateral spread has generally been observed to take place in the direction of a free-face (i.e., retaining wall, slope, channel, etc.) but has also been observed to a lesser extent on ground surfaces with gentle slopes. An empirical model developed by Youd, et al. (2002) is typically used to predict the amount of horizontal ground displacement within a site. For sites located in proximity to a free-face, the amount of lateral ground displacement is correlated with the distance of the site from the free-face. Other factors such as earthquake magnitude, distance from the causative fault, thickness of the liquefiable layers, and the fines content and particle sizes of the liquefiable layers also influence the amount of lateral ground displacement.

Based on the proposed topography at the site, and the presence of potentially liquefiable layers in the underlying soil materials, the site is considered to be potentially susceptible to seismically-induced lateral spread.

6.4.5. Tsunamis

Tsunamis are long wavelength seismic sea waves (long compared to ocean depth) generated by the sudden movements of the ocean floor during submarine earthquakes, landslides, or volcanic activity. Based on tsunami inundation maps published by the California Geological Survey (CGS, 2009; Figure 7), the land to the west and east of the project is not designated as a tsunami inundation area. However, the project site was not evaluated as part of the mapping. The tsunami potential may be reevaluated after the project prepares the new land. Presently, the shore of the lagoon is designated as a tsunami line, which represents the maximum considered tsunami runup. The southwestern boundary of the project borders the

San Diego Harbor, which, along with Harbor Island to the west, is designated as a tsunami inundation area by CGS.

6.5. Landsliding

Based on our review of published geologic literature, topographic maps, aerial photographs, and our site reconnaissance, no landslides or related features underlie or are adjacent to the project and the potential for landslides is considered low.

6.6. Flood Hazards

Based on review of Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), posted on the County of San Diego, San Diego Geographic Information Source (SanGIS) website (2004), the existing shore of the lagoon is within the 100-year flood zone and areas northeast of the project are within the 500-year flood zone. The City of San Diego General Plan (2008) designates the lagoon and the San Diego Harbor southwest of the project within the 100-year flood zone. Based on review of dam inundation maps, significant flooding due to dam inundation is not expected to occur at the project.

6.7. Expansive Soils

Expansive soils generally result from specific clay minerals that have the capacity to shrink or swell in response to changes in moisture content. Based on review of regional geologic maps, geologic reconnaissance, and knowledge of the vicinity, the fill and bay deposits underlying the project site typically consist of silty sand, silt, and sandy clay. Layers of these deposits are considered to have a moderate to high potential for expansion. Although the existing soils at the project may be expansive, much of the material is saturated and dredged and imported fill materials are planned to raise site grade, thus burying these layers. Based on our familiarity with the potential dredge source, granular materials are likely to be placed as fill. Furthermore, import capping materials would likely be specified as granular; therefore, the potential for near-surface expansive soils at the project is low.

6.8. Compressible Soils

Compressible soils, like expansive soils, result from specific clay minerals or loose granular materials that have the capacity to shrink or compress in response to changes in moisture content or new loads. Based on review of regional geologic maps, geologic reconnaissance, and knowledge of the vicinity, the fill and bay deposits underlying the project typically consist of silty sand, silt, and sandy clay, which are considered highly compressible under new loading.

6.9. Corrosive Soils

Caltrans corrosion (2003) criteria define as soils with more than 500 parts per million (ppm) chlorides, more than 0.2 percent sulfates, or a pH less than 5.5. Due to the proximity of the marine environment and the anticipated variability of the on-site soils, site soils should be considered to be corrosive.

6.10. Agricultural Soils

Based on the Soil Survey for the San Diego Area (Bowman, 1973), two different soil series have been noted on the areas surrounding the project. These soil types include Made Land and Urban Land. The soil types and their characteristics are summarized in Table 2. The potential for loss of agricultural soils due to further development of the study area is considered low because the project is near a paved roadway and dredged fill land platforms; the soils in these areas are not in their natural state.

Table 2 – Soil Series Characteristics

Soil Series and Map Symbol	Use	Erosion Potential
Made land (Md)	Building sites	Unknown
Urban land (Ur)	Soil altered by urban works; identification not feasible	Unknown

6.11. Mineral Resources

According to the California Geological Survey Open File Report 96-04 and the City of San Diego General Plan (2008) the project is located in Mineral Resource Zone 1 (MRZ-1).

MRZ-1 is an area where adequate information indicates that no significant mineral deposits are present, or where it is judged that there is little likelihood for their presence.

7. CONCLUSIONS

Based on our review of the referenced background data and our geologic field reconnaissance it is our opinion that geologic and geotechnical considerations at the project include the following:

- The project is underlain by fill material and bay deposits, and underlain at depth by Pleistocene-age old paralic deposits. The fill includes relatively thin material placed as part of a capping operation in the 1990s. Recent bay sediments, deposited along the edges of San Diego Bay, underlie the fill. Geotechnical constraints related to soils at the project are discussed below:
    - *Soft Ground* – Soft ground or loose soils exist underlying the project.
    - *Expansive Soils* – Layers within existing site soils may have a moderate to high potential for expansion. Dredged and imported fill materials are proposed to raise site grade. Based on our familiarity with the potential dredge source (San Diego Bay), granular materials are likely to be placed as fill. Further capping import materials would likely be specified as granular, therefore the potential for near-surface expansive soils at the project is low.
    - *Compressible Soils* – The fill and bay deposits underlying the project typically consist of silty sand, silt, and sandy clay, which are considered compressible under new loading. .
    - *Fill Soils* – Fill soils placed without engineering supervision may be loosely or inadequately compacted, may contain oversize materials unsuitable for reuse in engineered fills, and may contain unsuitable organic or expansive materials and debris that may preclude their re-use in engineered fills.
- The Spanish Bight Fault strand, an element of the Rose Canyon Fault, intersects the southwestern boundary of the project. As a consequence, the western portion of the project is located within a State of California-designated Earthquake Fault Zone (formerly known as an Alquist-Priolo Special Studies Zone) and a City of San Diego designated fault study zone. Geotechnical constraints related to faulting and seismic events at the project are:
    - *Ground Shaking* – The project has a high potential for strong ground motions due to earthquakes on adjacent and nearby active faults.
    - *Ground Surface Rupture* – Ground surface rupture due to active faulting is possible at the project due to the presence of the Spanish Bight Fault strand at the southwestern

boundary of the project. Additionally, lurching or cracking of the ground surface as a result of nearby seismic events is possible.

- *Liquefaction* – The soils underlying the project may be subject to dynamic settlement or liquefaction during a nearby seismic event.
- *Lateral Spread* – The soils underlying the project are considered to be potentially susceptible to seismically-induced lateral spread during a nearby seismic event.

- Groundwater is expected at an elevation of approximately 3 feet above mean lower low water (MLLW) (approximately 9 feet below the proposed ground surface).
- Based on tsunami inundation maps published by the California Geological Survey (2009), the land to the west and east of the project is not designated as a tsunami inundation area. Presently, the shore of the lagoon is designated as being within maximum considered tsunami runup. The southwestern boundary of the project borders the San Diego Harbor, which, along with Harbor Island, is designated as a tsunami inundation area.
- Based on our review of published geologic literature, aerial photographs, and our site reconnaissance, no landslides or related features underlie or are adjacent the project and the potential for landslides is considered low.
- Based on review of FEMA FIRM, posted on the County of San Diego, SanGIS website (2004), the shore of the lagoon is within the 100-year flood zone.
- Based on review of dam inundation maps, significant flooding due to dam inundation is not expected to occur at the project.
- Due to the proximity of the marine environment and the anticipated variability of the on-site soils, the soils at the project should be considered as highly corrosive.

8. RECOMMENDATIONS

Based on the geologic and geotechnical considerations at the project presented in the previous section, our general recommendations for the project development are presented below. These recommendations assume that a geotechnical evaluation will be conducted and specific recommendations provided at that time for the actual proposed development.

- Hydrocollapse – Proposed fill materials within and overlying the zone of fluctuating groundwater may be subject to hydrocollapse. A recommendation to mitigate this condition could typically include removal and/or replacement of soils as engineered compacted fill. The extent of removals cannot be determined without further investigation.

- Soft Ground – Soils in areas with soft ground or loose soils in the area of the proposed project may be subject to settlement or may provide weak bearing conditions for support of proposed barriers and fills. A recommendation to mitigate this condition could typically include removal and/or replacement of soils as engineered fill. The extent of removals cannot be determined without further investigation.

- Expansive Soils – Expansive soils may exist at the project. However, they are likely to remain saturated and be buried under proposed fill, thus mitigating the potentials for expansion. The presence of expansive soils would not preclude the proposed construction. If expansive soils exist on site, the following recommendations may be implemented during construction to address this condition: the soils could remain in deeper fill areas or the soils could be excavated and removed from the site.

- Compressible Soils – Compressible soils may lead to settlement of the proposed project and potential instability for overlying slopes. The following recommendations may be implemented during construction to address this condition: the soils could be excavated and removed from the site; they could be treated to mitigate their potential for compression, or the materials could be surcharged through the benefit of proposed fills.

- Ground Shaking – Although there is a high potential for ground shaking at the project during a nearby seismic event, this would not preclude the proposed construction. Engineering measures to mitigate the effects of ground shaking are anticipated to be included in future development.

- Liquefaction – Although soils underlying the project may be subject to liquefaction or static settlement during a nearby seismic event, this would not preclude the proposed construction. The following recommendations may be implemented during construction to mitigate this condition: removal and replacement of soils susceptible to liquefaction, densification of these soils through geotechnical engineering methods (e.g., stone columns, compaction grouting, or deep, dynamic compaction), or selecting an engineering foundation design to accommodate the expected effects of liquefaction.

- Shallow groundwater – Shoring and dewatering may be required for the proposed construction (i.e., trenching) where shallow groundwater is present.

- Flooding – Although portions of the project are in flood hazard areas, potential flooding of the site would not preclude the proposed construction.

- Corrosive Soils – Due to the proximity of the marine environment and the anticipated variability of the on-site soils, the soils at the project should be treated as highly corrosive. A corrosion engineer should be retained to assist in the design of improvements in contact with the soil should further development propose such features.

9. IMPACT ANALYSIS

Based upon the results of our Geology and Soils Evaluation, our opinions, and recommendations are provided in the following sections.

9.1. Significance Thresholds

In evaluating the significance of potential environmental concerns in a particular study area, the criteria to consider, as they relate to geologic and soil conditions, are presented in the CEQA Guidelines. In accordance with the scope of work, the findings of this study were evaluated with respect to Questions A through E of Section 6 "Geology and Soils" with in Appendix G of the CEQA Guidelines (2009).

9.2. Project Impacts and Significance

Based on the above criteria and the results of the evaluation, the potential impact by geologic and soil conditions at the project have been identified, and are discussed below.

A. Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of known fault?

Ground surface rupture due to active faulting is possible at the project due to the presence of the Spanish Bight Fault strand. As noted, the Spanish Bight Fault intersects the southwestern boundary of the project. Additionally, lurching or cracking of the ground surface as a result of nearby seismic events is possible. This risk should be evaluated by a geotechnical evaluation performed for the specific development of the project once development use and details are known.

ii. Strong seismic ground shaking?

The project has a high potential for strong ground motions due to earthquakes on nearby active faults.

iii. Seismic related ground failure, including liquefaction?

Based on the relatively loose fill material and bay deposits underlying the project, the presence of shallow groundwater, and knowledge from previous evaluations of liquefaction near the project, soils underlying the project may be subject to liquefaction or static settlement during a nearby seismic event.

iv. Landslides?

Based on our review of published geologic literature, aerial photographs, and our site reconnaissance, no landslides or related features underlie or are adjacent to the project and the potential for landslides is considered low.

B. Would the project result in substantial soil erosion or the loss of topsoil?

The potential for substantial soil erosion or loss of topsoil due to the proposed project improvements is considered low. Additionally, the capping fill material and compaction would generally be recommended to be placed to reduce the potential for soil erosion.

C. Would the project be located on geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

The soils underlying the project may be subject to liquefaction, lateral spreading, and settlement due to subsidence, hydrocollapse, or consolidation of soft soils. A geotechnical evaluation would provide mitigation measures for the project.

D. Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Soils with a moderate to high potential for expansion may be present at the site. However, these materials are expected to be mitigated during construction of the project by remaining saturated at relatively deep depths.

10. LIMITATIONS

The field evaluation and geotechnical analyses presented in this report have been conducted in accordance with current engineering practice and the standard of care exercised by reputable geotechnical consultants performing similar tasks in this area. No warranty, implied or expressed, is made regarding the conclusions, recommendations, and professional opinions expressed in this report. Variations may exist and conditions not observed or described in this report may be encountered. Our preliminary conclusions and recommendations area based on an analysis of the observed conditions and the referenced background information.

The purpose of this study was to evaluate geologic and geotechnical conditions within the project and to provide a geotechnical reconnaissance report to assist in the preparation of environmental impact documents for the project. A comprehensive geotechnical evaluation, including subsurface exploration and laboratory testing, should be performed prior to design and construction of structural improvements.

11. REFERENCES

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AERIAL PHOTOGRAPHS				
Source	**Date**	**Flight**	**Numbers**	**Scale**
USDA	March 31, 1953	AXN 3M	214 & 215	1:20,000

SOURCE: 2008 Thomas Guide for San Diego County, Street Guide and Directory; Map © Rand McNally, R.L.07-S-129

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE

SCALE IN FEET

0 1,200 2,400 4,800

Ninyo & Moore		SITE LOCATION	FIGURE
PROJECT NO.	DATE	SHIPYARD SEDIMENT ALTERNATIVE CONVAIR LAGOON SAN DIEGO, CALIFORNIA	1
106997002	5/11		

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SOURCE: SOURCE: Aerial Imagery - Photo Date: August, 2010; (c) Google Earth, 2011

LEGEND

PROJECT AREA

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

SCALE IN FEET

0 100 200 400

Ninyo & Moore		SITE AND VICINITY	FIGURE
PROJECT NO.	DATE	SHIPYARD SEDIMENT ALTERNATIVE CONVAIR LAGOON SAN DIEGO, CALIFORNIA	2
106997002	5/11		

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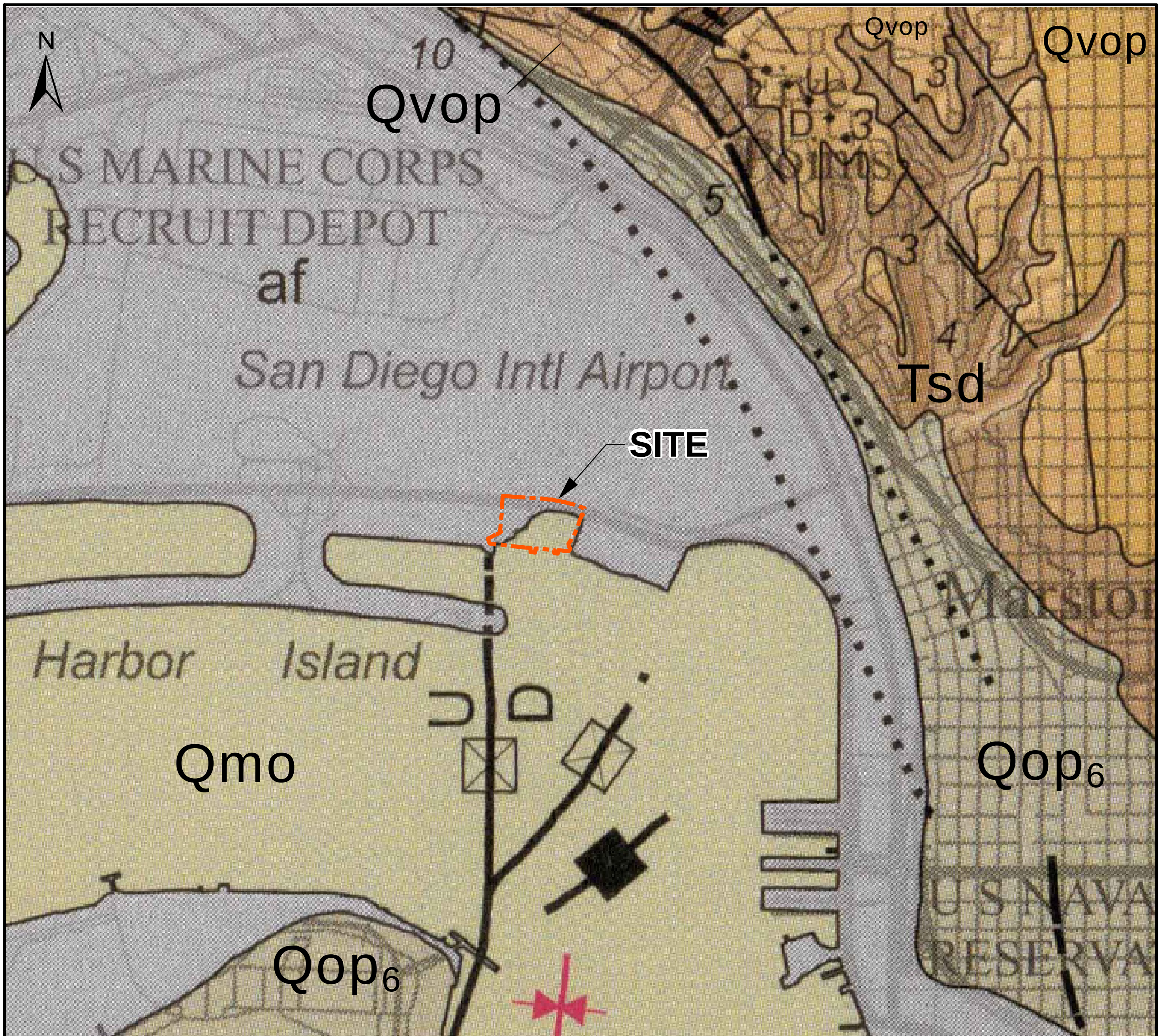

LEGEND

af	ARTIFICIAL FILL (LATE HOLOCENE)
Qmo	UNDIVIDED MARINE DEPOSITS IN OFFSHORE REGION (LATE HOLOOCENE)
Qop_6	OLD PARALIC DEPOSITS, (LATE TO MIDDLE PLEISTOCENE)
Qvop	VERY OLD PARALIC DEPOSITS, UNDIVIDED (MIDDLE TO EARLY PLEISTOCENE)
Tsd	SAN DIEGO FORMATION (EARLY PLEISTOCENE AND LATE PLIOCENE) - MARINE SANDSTONE
5	STRIKE AND DIP OF BEDS INCLINED
U / D	FAULT - SOLID WHERE WELL DEFINED; DASHED WHERE APPROXIMATELY LOCATED; SHORT DASH WHERE INFERRED; DOTTED WHERE CONCEALED
	CUTS STRATA OF HOLOCENE AGE
	CUTS STRATA OF LATE QUATERNARY AGE
	SYNCLINE - SOLID WHERE WELL DEFINED; SHORT WHERE INFERRED

SOURCE: KENNEDY, M.P., AND TAN, S.S., 2008, GEOLOGIC MAP OF THE SAN DIEGO 30' X 60' QUADRANGLE, CALIFORNIA.

NOTES: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE

SCALE IN FEET

0 1,000 2,000 4,000

Ninyo & Moore

GEOLOGY

PROJECT NO.	DATE	SHIPYARD SEDIMENT ALTERNATIVE CONVAIR LAGOON SAN DIEGO, CALIFORNIA	FIGURE
106997002	4/11		3

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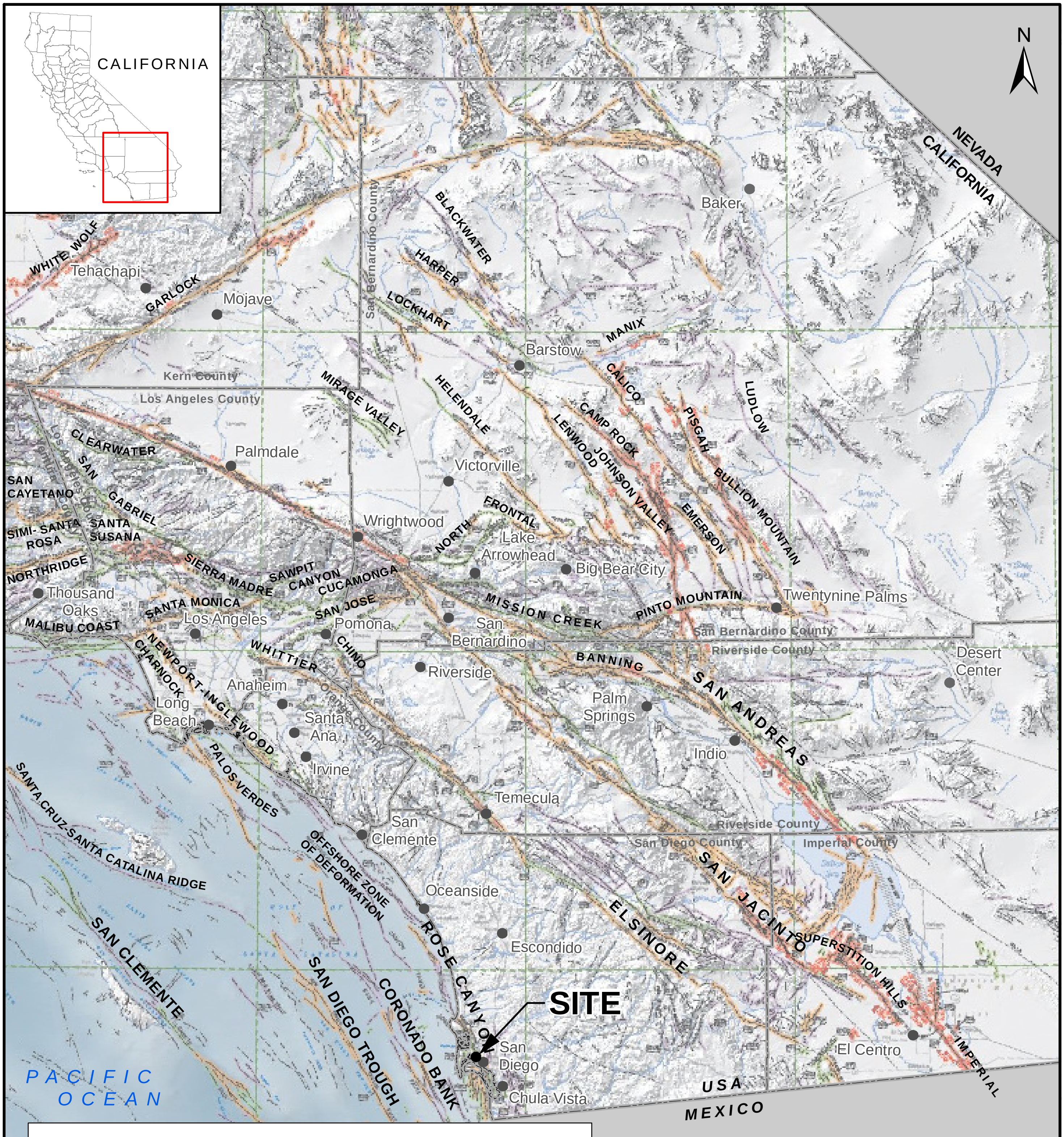

LEGEND

CALIFORNIA FAULT ACTIVITY

- HISTORICALLY ACTIVE
- HOLOCENE ACTIVE
- LATE QUATERNARY (POTENTIALLY ACTIVE)
- QUATERNARY (POTENTIALLY ACTIVE)
- STATE/COUNTY BOUNDARY

SOURCE: Fault Activity Map of California, 2010, Jennings, C.W., and Bryant, W.A., California Geological Survey.

APPROXIMATE SCALE

0 30 60 MILES

NOTES: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE

Ninyo & Moore

FAULT LOCATIONS

PROJECT NO.	DATE
106997002	5/11

SHIPYARD SEDIMENT ALTERNATIVE
CONVAIR LAGOON
SAN DIEGO, CALIFORNIA

FIGURE 4

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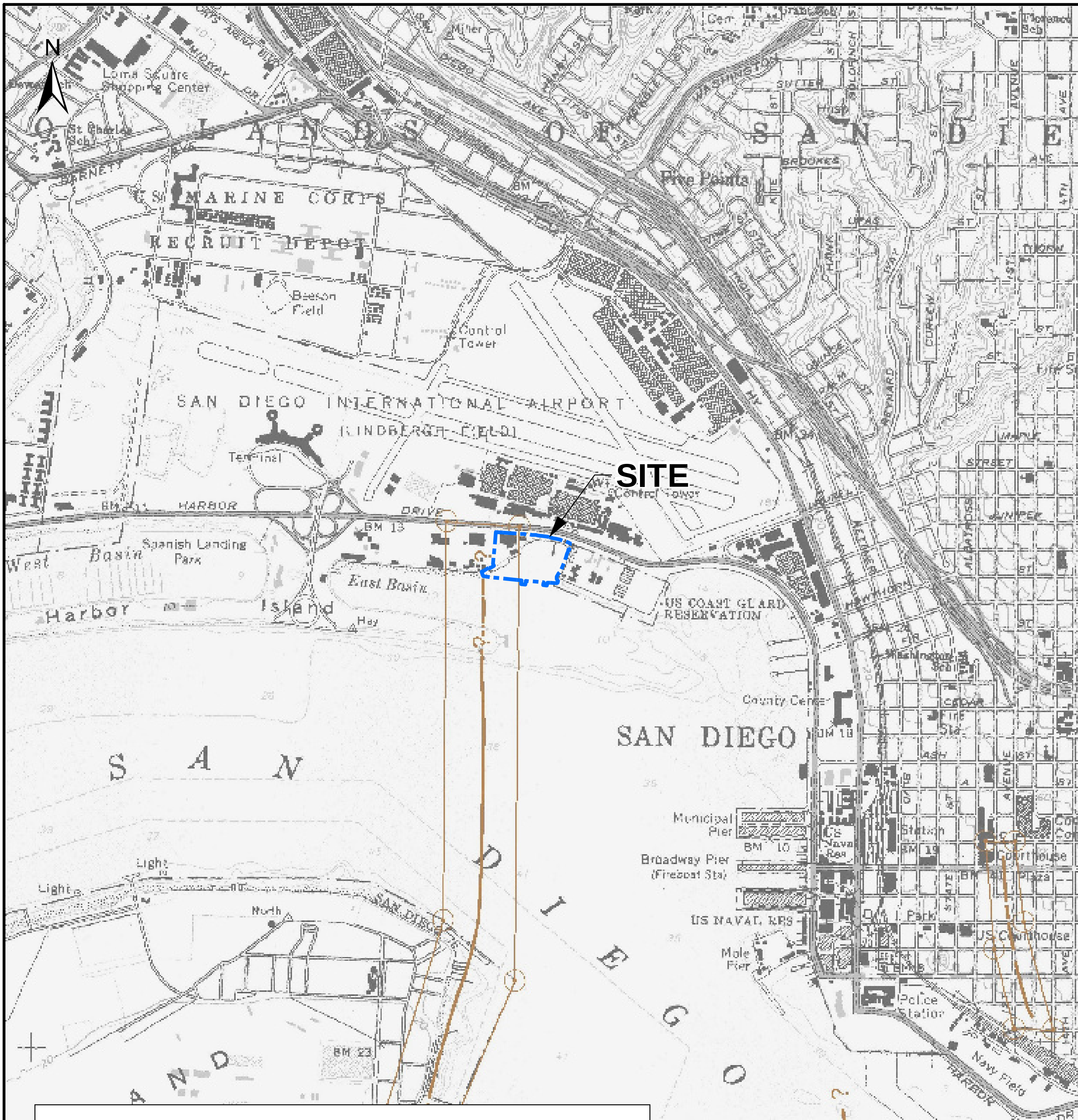

LEGEND

ACTIVE FAULTS
LONG DASH WHERE APPROXIMATELY LOCATED, SHORT DASH WHERE INFERRED, DOTTED WHERE CONCEALED; QUERY INIDICATES ADDITIONAL UNCERTAINTY.

THESE ARE DELINEATED AS STRAIGHT-LINE SEGMENTS THAT CONNECT ENCIRCLED TURNING POINTS SO AS TO DEFINE EARTHQUAKE FAULT ZONE SEGMENTS.

SOURCE: BASE - STATE OF CALIFORNIA EARTHQUAKE FAULT ZONES, POINT LOMA QUADRANGLE, DATED 2003.

SCALE IN FEET

0 1,000 2,000 4,000

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore		EARTHQUAKE FAULT ZONES	FIGURE
PROJECT NO.	DATE	SHIPYARD SEDIMENT ALTERNATIVE CONVAIR LAGOON SAN DIEGO, CALIFORNIA	5
106997002	5/11		

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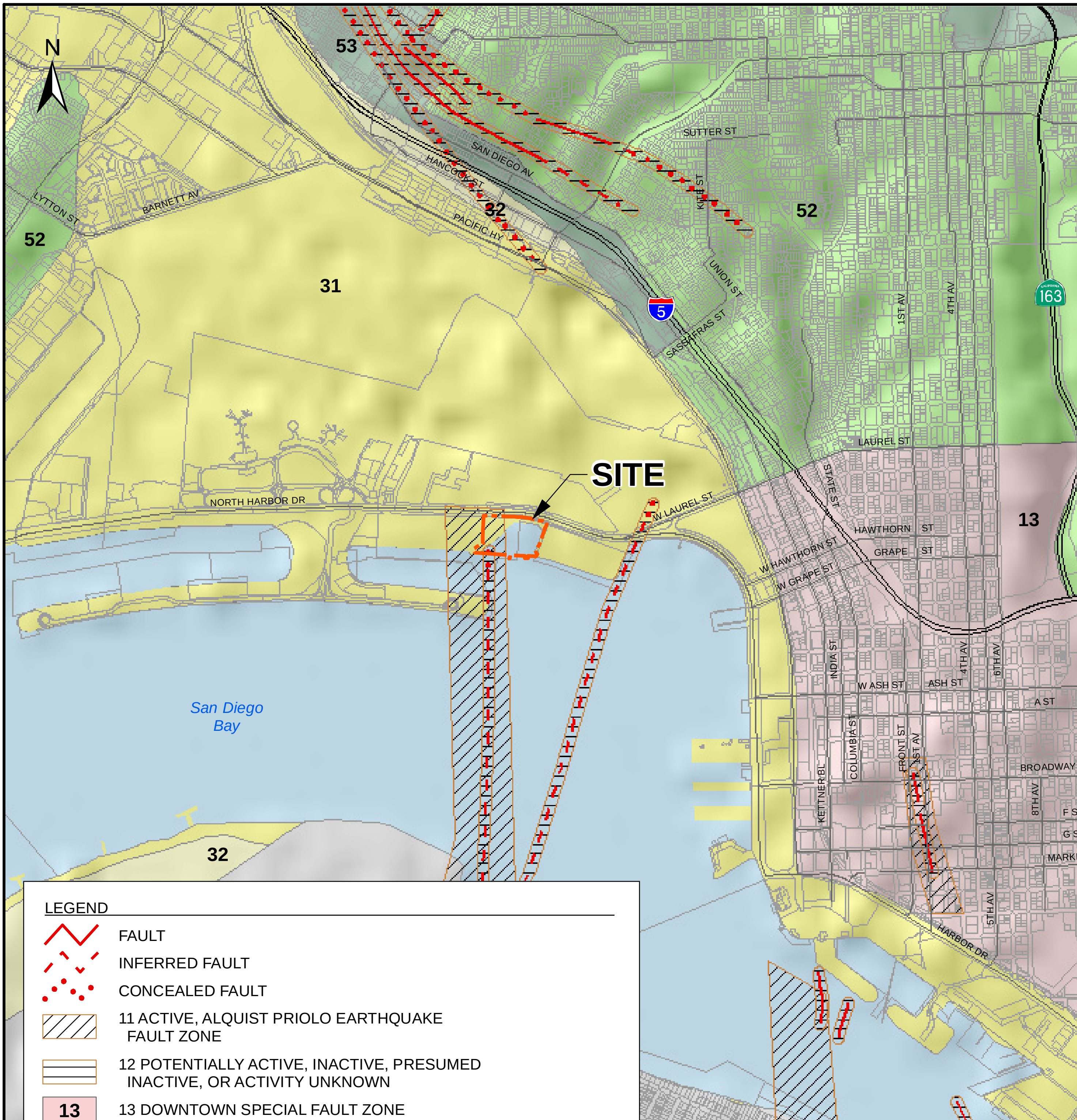

LEGEND

FAULT

INFERRED FAULT

CONCEALED FAULT

11 ACTIVE, ALQUIST PRIOLO EARTHQUAKE FAULT ZONE

12 POTENTIALLY ACTIVE, INACTIVE, PRESUMED INACTIVE, OR ACTIVITY UNKNOWN

13 — 13 DOWNTOWN SPECIAL FAULT ZONE

31 — 31 HIGH LIQUEFACTION POTENTIAL - SHALLOW GROUNDWATER MAJOR DRAINAGES, HYDRAULIC FILLS

32 — 32 LOW LIQUEFACTION POTENTIAL - FLUCTUATING GROUNDWATER MINOR DRAINAGES

52 — 52 OTHER LEVEL AREAS, GENTLY SLOPING TO STEEP TERRAIN, FAVORABLE GEOLOGIC STRUCTURE, LOW RISK

53 — 53 LEVEL OR SLOPING TERRAIN, UNFAVORABLE GEOLOGIC STRUCTURE, LOW TO MODERATE RISK

SOURCE: City of San Diego Seismic Safety Study Geologic Hazards and Faults, SanGIS, 2008

SCALE IN FEET

0 1,200 2,400 4,800

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

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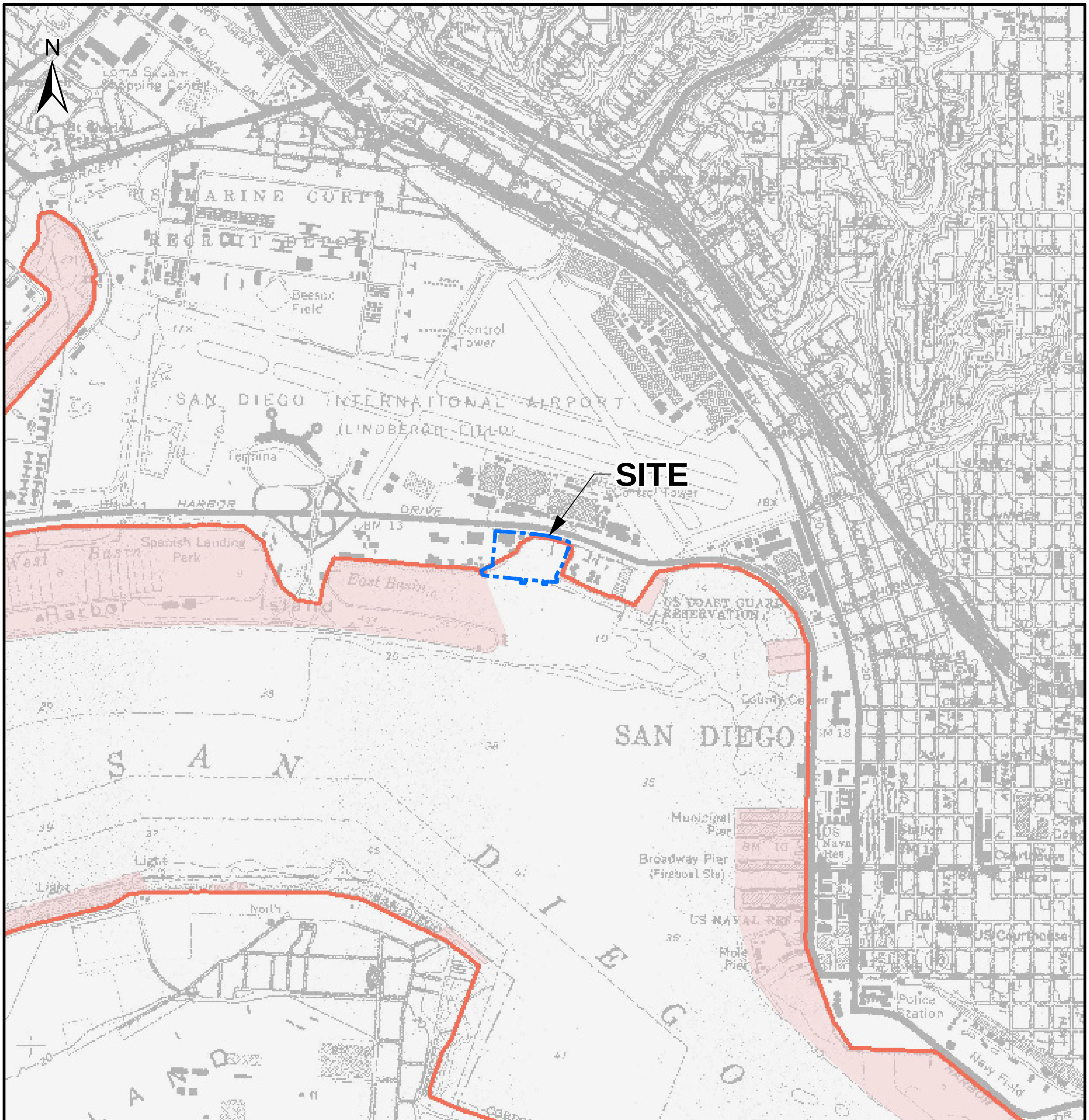
Ninyo & Moore		GEOLOGIC HAZARDS	FIGURE
PROJECT NO.	DATE	SHIPYARD SEDIMENT ALTERNATIVE CONVAIR LAGOON SAN DIEGO, CALIFORNIA	6
106997002	5/11		



SOURCE: Base - TSUNAMI MAP FOR EMERGENCY PLANNING; State of California - County of San Diego, USGS 7.5 Minute Topographic Quadrangle - Point Loma, CA - June 1, 2009.

LEGEND

TSUNAMI INUNDATION LINE

TSUNAMI INUNDATION AREA

SCALE IN FEET

0 1,000 2,000 4,000

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore

PROJECT NO.	DATE	TSUNAMI INUNDATION	FIGURE
106997002	5/11	SHIPYARD SEDIMENT ALTERNATIVE CONVAIR LAGOON SAN DIEGO, CALIFORNIA	7

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APPENDIX M

GREENHOUSE GAS CALCULATIONS

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\22242\Desktop\Shipyard\Shipyard 05 27 11.urb924

Project Name: Shipyard

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5	PM2.5	CO2
2013 TOTALS (tons/year unmitigated)	1.94	19.76	9.29	0.03	0.95	0.81	1.76	0.21	0.74	0.95	3,512.30
2014 TOTALS (tons/year unmitigated)	0.16	1.29	0.98	0.00	0.01	0.07	0.07	0.00	0.06	0.06	250.71

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013	1.94	19.76	9.29	0.03	0.95	0.81	1.76	0.21	0.74	0.95	3,512.30
Demolition 01/01/2013-02/28/2013	0.10	0.83	0.42	0.00	0.01	0.04	0.05	0.00	0.03	0.04	118.88
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.10	0.82	0.39	0.00	0.00	0.04	0.04	0.00	0.03	0.03	115.58
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30
Building 02/01/2013-05/31/2013	0.16	1.20	0.97	0.00	0.01	0.06	0.06	0.00	0.05	0.06	227.88
Building Off Road Diesel	0.12	0.68	0.41	0.00	0.00	0.04	0.04	0.00	0.04	0.04	80.91
Building Vendor Trips	0.04	0.51	0.40	0.00	0.00	0.02	0.02	0.00	0.02	0.02	128.86

Building Worker Trips	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.11
Fine Grading 02/01/2013-05/31/2013	0.31	3.96	1.30	0.00	0.85	0.13	0.97	0.18	0.12	0.30	571.37
Fine Grading Dust	0.00	0.00	0.00	0.00	0.84	0.00	0.84	0.17	0.00	0.17	0.00
Fine Grading Off Road Diesel	0.22	2.64	0.81	0.00	0.00	0.08	0.08	0.00	0.07	0.07	311.17
Fine Grading On Road Diesel	0.09	1.32	0.46	0.00	0.01	0.05	0.06	0.00	0.05	0.05	256.90
Fine Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.30
Building 04/02/2013-05/31/2013	0.08	0.61	0.49	0.00	0.00	0.03	0.03	0.00	0.03	0.03	116.59
Building Off Road Diesel	0.06	0.35	0.21	0.00	0.00	0.02	0.02	0.00	0.02	0.02	41.40
Building Vendor Trips	0.02	0.26	0.21	0.00	0.00	0.01	0.01	0.00	0.01	0.01	65.93
Building Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.27
Fine Grading 04/02/2013-05/31/2013	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.07
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.07
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building 06/03/2013-11/29/2013	0.51	2.63	2.24	0.00	0.01	0.16	0.17	0.00	0.14	0.15	431.25
Building Off Road Diesel	0.44	1.84	1.40	0.00	0.00	0.13	0.13	0.00	0.12	0.12	209.09
Building Vendor Trips	0.06	0.77	0.61	0.00	0.01	0.03	0.04	0.00	0.03	0.03	194.78
Building Worker Trips	0.01	0.01	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.37
Fine Grading 06/03/2013-11/29/2013	0.72	10.05	3.54	0.02	0.07	0.37	0.44	0.02	0.34	0.37	1,955.97
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.72	10.05	3.54	0.02	0.07	0.37	0.44	0.02	0.34	0.37	1,955.97
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Building 12/02/2013-03/31/2014	0.04	0.33	0.28	0.00	0.00	0.02	0.02	0.00	0.02	0.02	59.08
Building Off Road Diesel	0.03	0.19	0.13	0.00	0.00	0.01	0.01	0.00	0.01	0.01	21.48
Building Vendor Trips	0.01	0.13	0.10	0.00	0.00	0.01	0.01	0.00	0.00	0.01	32.96
Building Worker Trips	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.63
Fine Grading 12/02/2013-03/31/2014	0.01	0.10	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.23
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.01	0.10	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.23
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	0.16	1.29	0.98	0.00	0.01	0.07	0.07	0.00	0.06	0.06	250.71
Building 12/02/2013-03/31/2014	0.10	0.86	0.77	0.00	0.00	0.05	0.05	0.00	0.04	0.04	171.87
Building Off Road Diesel	0.07	0.52	0.39	0.00	0.00	0.03	0.03	0.00	0.03	0.03	62.49
Building Vendor Trips	0.03	0.34	0.28	0.00	0.00	0.01	0.02	0.00	0.01	0.01	95.90
Building Worker Trips	0.00	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.48
Fine Grading 12/02/2013-03/31/2014	0.02	0.27	0.10	0.00	0.00	0.01	0.01	0.00	0.01	0.01	58.84
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.02	0.27	0.10	0.00	0.00	0.01	0.01	0.00	0.01	0.01	58.84
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt 04/01/2014-04/29/2014	0.04	0.16	0.11	0.00	0.00	0.01	0.01	0.00	0.01	0.01	20.00
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.02	0.13	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	11.89
Paving On Road Diesel	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.97
Paving Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.15

Phase Assumptions

Phase: Demolition 1/1/2013 - 2/28/2013 - Demolition of existing lagoon features

Building Volume Total (cubic feet): 0

Building Volume Daily (cubic feet): 0

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Crushing/Processing Equip (142 hp) operating at a 0.78 load factor for 8 hours per day

2 Excavators (350 hp) operating at a 0.57 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (300 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Fine Grading 2/1/2013 - 5/31/2013 - Dredging for jetty construction and import of material for construction

Total Acres Disturbed: 2.27

Maximum Daily Acreage Disturbed: 0.03

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 162.5 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 1483.96

Off-Road Equipment:

1 Cranes (1200 hp) operating at a 0.5 load factor for 8 hours per day

2 Generator Sets (570 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Fine Grading 4/2/2013 - 5/31/2013 - Dredging for storm drains

Total Acres Disturbed: 0

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 125

Off-Road Equipment:

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Phase: Fine Grading 6/3/2013 - 11/29/2013 - Export of Dredged sediment to Kettleman

Total Acres Disturbed: 0

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 7474.35

Off-Road Equipment:

Phase: Fine Grading 12/2/2013 - 3/31/2014 - Used to estimate import for cap. Equipment list is split between this and the construction phase.

Total Acres Disturbed: 0

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 456.74

Off-Road Equipment:

Phase: Paving 4/1/2014 - 4/29/2014 - Type Your Description Here

Acres to be Paved: 10

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 2/1/2013 - 5/31/2013 - Construction of Jetty

Off-Road Equipment:

2 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Pumps (50 hp) operating at a 0.6 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

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Phase: Building Construction 4/2/2013 - 5/31/2013 - Construction of storm drain extensions

Off-Road Equipment:

2 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Pumps (50 hp) operating at a 0.6 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 6/3/2013 - 11/29/2013 - Placement of fill

Off-Road Equipment:

2 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

8 Pumps (50 hp) operating at a 0.6 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Building Construction 12/2/2013 - 3/31/2014 - Construction of cap

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Tug Boat GHG Emissions During Convair Lagoon Alternative Construction

Source: U.S. Environmental Protection Agency. 2009. Current Methodologies in Preparing Mobile Source Port-Related Emissions Inventories - Final Report. April

Emissions = Σ(emissions Factor for Engine Tier)*Load Factor*Annual Activity*# of Engines*KW*Correction Factor)

GHG Emissions (grams) - Containment Barrier Construction

Pollutant	Emissions Factor (g/kWH)	Load Factor	Annual Activity (Hours)	Engine Power (KW)	Total Emissions (g)	Emissions (Metric Tons)	CO2e
CO2	690	0.79	80	1,231	53,681,448	53.681448	53.681448
N2O	0.02	0.79	80	1,231	1,556	0.001556	0.49791488
CH4	0.09	0.79	80	1,231	7,002	0.0070019	0.147040488
						Total GHG Emissions	54.32640337

GHG Emissions (grams) - Sediment Transport

Pollutant	Emissions Factor (g/kWH)	Load Factor	Annual Activity (Hours)	Engine Power (KW)	Total Emissions (g)	Emissions (Metric Tons)	CO2e
CO2	690	0.79	980	1,231	657,597,738	657.59774	657.597738
N2O	0.02	0.79	980	1,231	19,061	0.0190608	6.09945728
CH4	0.09	0.79	980	1,231	85,774	0.0857736	1.801245978
						Total GHG Emissions	665.4984413

Factor	**Assumption**	**Basis**
Engine Tier	Tier 0	Most conversative, baseline for EPA Repot
Load Factor = 0.31 - based on EPA report	0.79	Based on EPA Report for Port of LA and Port of Long Beach. No separate load factor for idling available
Annual Activity - Full Operation Jetty Construction	80 hours	80 working days. AQ analysis assumes one tug boat would operated for 8 hours a day to estimate maximum daily emissions. This would overestimate annual emissions because barges would generally be stationary during this phase. It is assumed tug boats would operated for 1 hour per working day to move barges into position
Annual Activity - Idling during Sediment Transport	784 hours	Assume tugboats are idling during loading an unloading. Assume 4 hours per trip for loading and 4 hours per trip for unloading. Based on Design Rate Simulations. 2011. Port of Mobile Barge Terminal Hypothetical Barge Unloading Simulation Case Study. Available at http://design-rate.com/case_study_barge_unloading.htm, accessed May 11, 2011. While the construction equipment required to load the barges is included in the impact analysis for the proposed project, therefore it is not included in the impact analysis for this alternative, the idling barges during loading was not considered in the proposed project analysis. Therefore, GHG from barge idling during loading is included in this analysis
Annual Activity - Full Operation Sediment Transport	196 hours	98 trips, 10 miles round trips. Speed limit around lagoons is 5 mph. Assume tow boats would travel at 5 mph. Round trip would take 2 hours.
Number of Engines	1	Sum of HP of all engines is 1,650 HP
Engine Power	1231 kW	Convert 1,650 HP to KW
Correcton Factor	1	Based on EPA Report. Same for all GHGs

Greenhouse Gas Emission Worksheet

Construction Emissions

Project: 0
Project Number: 0 1 ton (short, US) = 0.90718474 metric ton.

Off-Road Construction Equipment

Phase	tons CO_2[2]	metric tons CO2	MT N20(3)	CO2e	MT CH4(3)	CO2e	Total CO2e
Demolition	119	108	0.003239	1.003981352	0.014034	0.294717	109
Excavation of Construction of Containment Barrier (no tug boats)	799	725	0.021745	6.741017648	0.094229	1.978815	734
Storm Drain Extension	128	116	0.003484	1.079912714	0.015096	0.317007	118
Sediment Placement (no tug boats)	431	391	0.01173	3.636268593	0.05083	1.067421	396
Landfill Disposal	1956	1774	0.053234	16.50241617	0.230679	4.844258	1796
Sand Cap Placement	310	281	0.008437	2.615413605	0.03656	0.76775	285
Paving	20	18	0.000544	0.168736362	0.002359	0.049532	18
Containment Barrier Tugboats(1)		54					54
Sediment Transfer Tugboats(1)		665					665
		0					0
		0					0
		0					0
		0					0
Total		**4133**		**32**		**9**	
Total CO2e		**4174**					

(1) MT CO2 is CO2e based on the EPA's Current Methodologies in Preparing Mobile Source Port-Related Emissions Inventories - Final Report (EPA,
(2) Source: URBEMIS 2007, version 9.2.4
(3) Estimated using the ratio of N2O and CH4 emissions to CO2 emissions in the EPA's Current Methodologies in Preparing Mobile Source Port-

APPENDIX N

HAZARDS AND HAZARDOUS MATERIALS TECHNICAL STUDY SHIPYARD SEDIMENT ALTERNATIVE ANALYSIS CONVAIR LAGOON

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HAZARDS AND
HAZARDOUS MATERIALS TECHNICAL STUDY
SHIPYARD SEDIMENT ALTERNATIVE ANALYSIS
CONVAIR LAGOON
SAN DIEGO, CALIFORNIA

PREPARED FOR:

Brown & Winters
120 Birmingham Drive, Suite 110
Cardiff By The Sea, California 92007

PREPARED BY:

Ninyo & Moore
Geotechnical and Environmental Sciences Consultants
5710 Ruffin Road
San Diego, California 92123

May 27, 2011
Project No. 106997003

25 YEAR ANNIVERSARY 1986-2011 Ninyo & Moore

May 27, 2011
Project No. 106997003

Ms. Wentzelee Botha
Brown & Winters
120 Birmingham Drive, Suite 110
Cardiff By The Sea, California 92007

Subject: Hazards and Hazardous Materials Technical Study
Shipyard Sediment Alternative Analysis
Convair Lagoon
San Diego, California

Dear Ms. Botha:

At your request, we have prepared this Hazards and Hazardous Materials Technical Report for the above-referenced project. The report has been prepared in accordance with applicable portions of our proposal, P-20189, dated March 11, 2011. This report presents our methodology, findings, opinions, and recommendations regarding the environmental conditions at the project area.

We appreciate the opportunity to be of service to you on this project.

Sincerely,
NINYO & MOORE

Lisa Bestard

Lisa Bestard, R.E.A.
Senior Project Environmental Scientist

Stephan A. Beck, PG 4375
Manager, Environmental Sciences Division

LB/SB/gg

Distribution: (1) Addressee

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1. INTRODUCTION

This Hazards and Hazardous Materials Technical Report (HHMTR) has been prepared as part of the Shipyard Sediment Alternative Analysis, Convair Lagoon, San Diego, California (Figure 1). The Convair Lagoon Alternative involves the construction of a confined disposal facility (CDF) for the placement of contaminated marine sediment dredged from the Shipyard Sediment Site. For a detailed project description, please reference the Alternative Description section in the Administrative Draft Program Environmental Impact Report (EIR), Shipyard Sediment Remediation Project, San Diego Bay.

The purpose of this HHMTR is to document possible environmental impacts at the project area from potential releases of hazardous materials or wastes, and to document, with respect to the California Environmental Quality Act (CEQA), the significance of impacts from the proposed project with respect to hazardous materials and wastes, and to discuss measures that can be implemented to reduce or mitigate the potential impacts.

A Draft EIR is currently being prepared by others to evaluate the proposed dredging and capping project at the Shipyard Sediment Site (LSA, 2011). The Draft HHMTR prepared for the Shipyard Sediment Site EIR provides a detailed description of the regulatory framework, regional environmental setting, and standard operating procedures (SOPs) for sediment dredging operations (Geosyntec, 2011). This HHMTR provides a summary of the applicable information presented in the Geosyntec HHMTR; therefore, for a more detailed description, please refer to the Geosyntec HHMTR.

2. SCOPE OF WORK

Ninyo & Moore's scope of work for this HHMTR included the activities listed below.

- Review physical setting information (e.g., topographic, geologic maps, groundwater data) pertaining to the project area.
- Review federal, state, and local on-line regulatory agency databases and lists for the project area.

- Review of readily available maps, reports, and other hazards and hazardous materials documents pertaining to the project area, including, but not limited to, clean up and abatement orders (CAOs), waste discharge requirements (WDRs), and technical reports prepared by others.
- Perform a site reconnaissance.
- Document the locations of current and proposed schools, based on review of available maps and/or consultation with the applicable public school district.
- Evaluate potential impacts to sensitive receptors (i.e., schools, hospitals) from exposure to hazardous materials associated with the project.
- Prepare this HHMTR report documenting findings and providing opinions and recommendations regarding possible environmental impacts at the project area from potential releases of hazardous materials or wastes, and potential impacts from hazardous materials or wastes from implementation of the project.

3. SITE LOCATION, DESCRIPTION, AND HISTORY

The following sections summarize the sit location, description, and background:

3.1. Site Location

The Convair Lagoon Alternative site consists of approximately 15 acres of water and land located within the San Diego Bay in the City of San Diego, California. The site is bounded by the San Diego Bay to the south; North Harbor Drive, a greenway, and the San Diego International Airport to the north; the United States North Harbor Drive Coast Guard Facility (U.S. Coast Guard Station) to the east; and a rental car parking lot to the west (Figure 1). The site is within the jurisdiction of the San Diego Unified Port District (District) and is located in Planning District 2 (Harbor Island/Lindbergh Field), Planning Subarea 24 (East Basin Industrial) of the 2010 Port Master Plan.

3.2. Site Description

The Convair Lagoon Alternative site is an area of the San Diego Bay that consists of open water, submerged facilities, and land. The land facilities on the Convair Lagoon Alternative site are located along the periphery, with the exception of the southern boundary, which is

San Diego Bay. Land facilities include an asphalt paved area along the northern boundary, parallel to North Harbor Drive; a concrete seawall or rip-rap located along the north, east, and west shorelines; and an abandoned concrete sea plane marine ramp located along the southwesterly interface between the land and water. The western and northwestern part of the site is a rental car parking lot.

The submerged facilities on the Convair Lagoon Alternative site include a sand cap, rock berm, and storm drains. The submerged area of the site includes an approximate 7-acre sand cap that was designed to isolate sediment contamination associated with former Teledyne Ryan (TDY) Aeronautical operations. In addition to the sand cap, submerged facilities on the site include a subsurface rock berm and multiple submerged storm drains. The submerged rock berm transects the site from the northwest corner to the southeast corner in an “L” shape to contain the existing sand cap. On the northern shoreline, a 60-inch diameter storm drain, a 54-inch diameter storm drain, and two 30-inch diameter storm drains outlet into the lagoon. The two 30-inch diameter storm drains, which served the former TDY facility, are abandoned in place or discharge runoff from Harbor Drive. On the western shoreline, three smaller storm drains outlet into the lagoon.

The adjacent surrounding areas consist of a greenway with a bicycle path is located to the north, parallel to North Harbor Drive. Directly west of the site is a rental car parking lot, while to the east is the U.S. Coast Guard Station. The San Diego Bay and a boat anchorage area (Anchorage A-9) are located to the south of the site.

3.3. Background

The surrounding shoreline of Convair Lagoon was previously shallow portions of the San Diego Bay that were filled with dredge sediment. The earliest information regarding dredging and fill operations in the vicinity of the alternative site is from 1921, when the northeastern shoreline of the bay was between present-day Pacific Highway and California Street. In the 1920s and 1930s, the area north of present-day West Laurel Street and North Harbor Drive, encompassing the eastern portion of the present-day San Diego Airport, was filled with material dredged from the bay. A dredging pipeline, (later converted to a 54-inch reinforced concrete storm drain), extended from the northern portion of the filled land, south to the bay, and discharged into the Convair Lagoon. In the mid-1930s, dredging operations filled the area where the U.S. Coast Guard Station is located east and adjacent to the alternative site. By 1939, a concrete pier was constructed above the previously mentioned storm drain on the site. In the early 1940s, dredging operations filled the area west of the site. Convair Lagoon is the unfilled area between the U.S. Coast Guard Station and the filled area to the west of the site. Throughout the years, multiple improvements to the site have been constructed and removed, including additional storm drains and other piers.

On October 17, 1986, the San Diego Regional Water Quality Control Board (RWQCB) Executive Officer issued "*Cleanup and Abatement Order No. 86-92 for Teledyne Ryan Aeronautical near Lindbergh Field, San Diego County*" for the discharge of polychlorinated biphenyl (PCBs), several trace metals, and volatile organic compounds to the storm drains on TDY property and to the Convair Lagoon portion of the San Diego Bay. CAO 86-92, as amended, required TDY to construct a sand cap on the San Diego Bay bottom in Convair Lagoon to isolate the existing sediment contamination within the lagoon from the environment.

In 1996, the PCB contamination in Convair Lagoon was remediated by the Convair Lagoon Capping Project. During the PCB remediation, the existing subsurface rock berm was constructed (Figure 2) and a sand cap was placed behind the rock berm. The majority of the existing sand cap is submerged, although construction of the cap converted approximately 1,400 square feet of an intertidal area to upland.

Recent bay deposits underlie the sand cap and PCB contaminated sediment. Bay deposit materials typically consist of interlayered dark gray, wet, loose, fine silty sand and silt and soft, sandy clay. Old paralic deposits underlie the bay deposits and typically consist of medium dense sand and stiff clay.

Subsequent to installation of the sand cap over the PCB contaminated sediments in Convair Lagoon, monitoring has discovered PCB contamination on top of the cap, presumably the result of contaminated sediment coming from the 60-inch storm drain. In response to this discovery, the RWQCB issued CAO R9-2004-0258, as amended, which addresses the cleanup and abatement of wastes discharged to land at the former TDY site. According to the CAO, significant wastes discharged to soil and groundwater at the site must be identified and cleaned up, and the discharge of any wastes to Convair Lagoon and San Diego Bay must be abated. A subsequent enforcement order will be necessary to assess and cleanup wastes discharged from landside sources to the marine sediments in Convair Lagoon and San Diego Bay. The CAO states that soil and groundwater must be cleaned up and waste discharges abated prior to conducting remedial actions in Convair Lagoon and San Diego Bay to prevent potential recontamination of the marine sediments in the bay. Therefore, the Convair Lagoon Alternative would commence construction once the PCB source is eliminated.

Convair Lagoon is associated with two active CAOs, 86-92 and R9-2004-0258, and WDR Order No. 98-21. A summary of these documents is provided in Section 5.

4. PHYSICAL SETTING

The following sections include discussions of the topographic, geologic, and hydrogeologic conditions at the project area.

4.1. Topography

The landside portions of the site are located at approximately sea level (USGS, 1996). The floor of the lagoon ranges in elevation from approximately 12 feet above mean lower low water (MLLW) to -15 feet MLLW (Ninyo & Moore, 2011).

4.2. Geology

The site is underlain by fill material and bay deposits. These are expected to be underlain by Pleistocene-age old paralic deposits. Recent bay sediments, deposited along the edges of San Diego Bay, are expected to underlie the fill. These materials typically consist of interlayered dark gray, wet to saturated, very loose to loose, silty fine sand and silt, and soft, sandy clay (Ninyo & Moore, 2011a).

4.3. Surface Waters

A portion of the site is within the San Diego Bay. According to the State Water Resources Control Board (SWRCB) Water Quality Control Plan for the San Diego Basin, the San Diego Bay has been assigned beneficial uses for industrial service supply, navigation, contact and non-contact water recreation, commercial and sport fishing, preservation of biological habitats of special significance, estuarine habitat, wildlife habitat, rare/threatened/endangered species, marine habitat, migration of aquatic organisms, spawning/reproduction/early development, and shellfish harvesting (SWRCB, 1994).

4.4. Groundwater

According to the SWRCB Water Quality Control Plan for the San Diego Basin, the project area is located within the Lindbergh Hydrologic Sub Area (908.21) of the San Diego Mesa Hydrologic Area within the Pueblo San Diego Hydrologic Unit (907.00). Groundwater in this hydrologic subarea has been excepted from municipal supply and does not currently have existing or potential beneficial uses (SWRCB, 1994).

There are eight groundwater monitoring wells located on the landside portion of the site (MWCL-1 through MWCL-8R). The monitoring wells are currently being monitored under CAO R9-2004-0258, associated with former TDY facility located adjacent to the north of the site beyond Harbor Drive (2701 North Harbor Drive). Based on a review of the October 2010 monitoring report on file on the SWRCB GeoTracker database, depth to groundwater at the site generally ranges form 6 to 11 feet below ground surface and generally flows south toward Convair Lagoon (Geosyntec Consultants, 2010). A discussion of the monitoring results is provided in Section 6.1.

5. ENVIRONMENTAL SETTING

In accordance with California Government Code Section 65962.5, as cited in Section 8, Part D within Appendix G of the Guidelines for Implementation of CEQA, a search was performed of the following sources to identify to evaluate whether adjacent properties have been documented as having experienced significant unauthorized releases of hazardous substances or other events with potentially adverse environmental effects.

- California Department of Toxic Substances Control (DTSC) Envirostor Database, list of hazardous waste facilities subject to corrective action, and Cortese List (DTSC, 2011 and 2011a).
- SWRCB GeoTracker Database (includes underground storage tank [UST] releases), list of solid waste disposal sites from which there is a documented migration of hazardous waste, and list of active cease and desist orders (CDO) and CAOs (SWRCB, 2011; DTSC, 2011).

The following sources were not searched as described below.

- DTSC list of properties designated as hazardous waste properties or border zone properties: DTSC has not currently designated any properties as hazardous waste or border zone properties.
- DTSC information regarding hazardous waste disposal on public land: DTSC does not currently keep separate record of hazardous waste disposal to public lands.
- DTSC Abandoned Site Assessment Program List: Sites with the Abandoned Site Assessment Program List were included in the former CalSites database, which was incorporated into the current Envirostor Database.
- Department of Health Services list of public drinking water wells that contain detectable levels of organic contaminants and are subject to water analysis in accordance with Section 116395 of the Health and Safety Code (HSC): Analysis in accordance with HSC Section 116395 was to be completed in 1988; therefore there are currently no wells being sampled in accordance with this regulation.

The following sections describe the on-site and adjacent facilities identified as having experienced significant unauthorized releases of hazardous substances or other events with potentially adverse environmental effects. In addition, potential issues associated with the Shipyard Sediment Site (i.e., the source of the proposed fill to be placed in the lagoon) are also discussed.

5.1. Convair Lagoon

Convair Lagoon is listed on the SWRCB list of active CDOs and CAOs as having two active CAOs: 86-92 and R9-2004-0258. The site is also subject to RWQCB WDR Order No. 98-21. A brief summary of these documents is provided below.

- **CAO 86-92 and Amendments:** The CAO was issued on October 17, 1986 to TDY for the discharge of PCBs, metals, and volatile organic compounds (VOCs) into the SWCS on the facility that discharged into Convair Lagoon (Figure 2). Sediments in the lagoon were found to contain PCBs at concentrations ranging from 1 to 1,800 milligrams per kilogram (mg/kg) as dry weight from the surface to depths of 10 feet. These concentrations were considered to by the RWQCB to require clean up and abatement to be protective of the waters of the state. Between 1986 and 1998, PCB wastes were removed from the SWCS at the facility. The CAO required a sand cap be constructed to isolate the contaminated sediments (i.e., identified in the CAO as sediments with PCBs at concentrations at or exceeding 4.6 mg/kg as dry weight) from the environment. An approximately 7-acre sand cap was completed at the site in 1998 that covered areas where sediments contained PCBs at concentrations exceeding 4.6 mg/kg as dry weight (Figure 3). As part of the capping project, approximately 1,400 square feet of intertidal land was converted to upland.

- **WDR 98-21:** Subsequent to the construction of the sand cap under CAO 86-92, the RWQCB issued WDR 98-21, Closure and Post-Closure maintenance of the Convair Lagoon Sand Cap, which regulates the sand cap and associated monitoring, maintenance, and, repairs. The WDR states that the action level to trigger repair and or investigation of the cap or cleaning of the SWCS at the TDY facility is 4.6 mg/kg dry weight in the sediments. The document also provides a list of water quality objectives that apply to the water within Convair Lagoon. Some of objectives provided are for dissolved oxygen, pH, oil and grease, suspended sediment load/discharge rate, turbidity, and toxicity.

- **CAO R9-2004-0258 and Amendments:** The CAO states that PCBs, VOCs, and heavy metals from the former manufacturing activities at the TDY facility have, “caused and threaten to cause conditions of pollution, contamination, and nuisance by exceeding applicable water quality objectives for toxic pollutants to San Diego Bay.” The document also states that PCB concentrations have continued to be found in the SWCS at the TDY facility even after clean out and replacement of portions of the system. In addition, PCBs discharged from the SWCS are being deposited on the surface of the sand cap at Convair Lagoon. PCBs have been detected on the surface of the sand cap at concentrations ranging from 1.77 to 20.44 mg/kg, which exceeds the clean up level of 4.6 mg/kg dry weight established in CAO 86-92 described above. Releases of waste to soil and groundwater are also noted from the former landside aerospace operations, which include impacts from chlorinated solvents and hexavalent chromium. The CAO states that these discharges may reach San Diego Bay through the migration of groundwater into the SWCS or directly into the bay.

  The CAO required a site investigation and characterization report be prepared that was completed on December 19, 2005 and included an evaluation of soil, groundwater, and sediment impacts (Geosyntec, 2005). A remedial investigation/feasibility study (RI/FS) was also required, that was submitted in March 2007. The RI/FS selected in-situ bioremediation to address chlorinated solvents in groundwater, in-situ reduction to address hexavalent chromium in groundwater, and excavation and off-site disposal of impacted soil and concrete (Geosyntec, 2007). Details of the proposed remedial actions were present in a Remedial Action Plan (Geosyntec, 2007a).

In accordance with the CAO, groundwater monitoring is being performed on a semi-annual basis at the TDY facility and at the site. Eight monitoring wells (MWCL-1 through MWCL-8R) are installed on the landside portion of the site as "sentry wells" to monitor potential impacts to San Diego Bay. The most recent groundwater monitoring report, July 2010, states that low levels of VOCs have been detected in the western well cluster (Figure 2) and that trace levels of PCBs were detected; however, they may have been a result of cross-contamination in the laboratory (Geosyntec, 2010).

A tentative addendum (number 4) to the CAO was issued on April 13, 2011, which states that there are three areas of concern with regard to the transport of wastes from the TDY facility to Convair Lagoon: 1) Convair Lagoon shoreline groundwater, 2) sediment in the SWCS that empties into Convair Lagoon/San Diego Bay, and 3) VOC-impacted groundwater seeping into the 54-inch and 60-inch storm drains. Although sediment transport to the lagoon is a concern, the storm drain inlets and laterals on the TDY facility were capped with concrete; therefore, no additional input of sediment to the SWCS from the TDY facility is known to be occurring. However, there is the potential for PCB impacted sediments to be transported to Convair Lagoon from sites upgradient of the TDY facility that continue to discharge into the SWCS. In addition, there is a potential risk to human health associated with the incidental ingestion of or contact with the sediments in the lagoon. The addendum requires that soil and groundwater contamination at the TDY facility be remediated to the identified clean up levels, visible sediment should be removed from within the 60-inch storm drain and associated energy dissipater, and a remedial action plan be submitted to detail how the cleanup levels will be achieved. The RWQCB is responsible for ensuring that the remediation is performed in accordance with the requirements of this CAO. Please see the ongoing studies bullet below for additional discussion of ongoing work associated with the TDY facility.

- **Ongoing Studies:** As required by the RWQCB in the CAO issued for the TDY facility, numerous investigations have been performed to evaluate impacted soil and groundwater, potential remedial alternatives, and potential sources of PCBs in the SWCS. The potential sources of PCBs in the SWCS have been identified as on-site and off-site soil, groundwater, sediment, building materials, and rainfall (Geosyntec, 2010a). Specific sites upgradient of TDY have not been identified as sources of PCBs in the SWCS.

A Remedial Investigation Feasibility Study (RI/FS) was prepared, which states that the recommended remedial action for addressing PCB impacted sediments in the 60-inch SWCS is to clean out sediments and remove the SWCS laterals on the site after the existing site buildings (a potential source of PCBs) have been removed. The RI/FS also states that the recommended remedial action for PCB impacts to groundwater at the site is to continue groundwater monitoring under the supervision of the RWQCB to confirm that PCB impacted groundwater is not migrating into Convair Lagoon at levels that exceed existing regulatory limits (Geosyntec, 2010b). The RWQCB will be responsible for ensuring the remediation of the TDY facility is performed in accordance with the requirements of the applicable CAOs.

5.2. Shipyard Sediment Site

The RWQCB is considering issuance of a CAO for discharges of metals and other pollutant wastes to San Diego Bay marine sediments. The tentative CAO (i.e., R9-2011-0001), states that metals, PCBs, and polynucclear aromatic hydrocarbons (PAHs) have impacted the sediments at the Shipyard Sediment Site as a result of former and current operations within the shipyards. The document proposes cleanup levels and requires either dredging or capping (under pier areas) to meet the proposed levels. A human health risk assessment (HHRA) for the sediments at the Shipyard Sediment Site was prepared as part of the Draft Technical report for the CAO. The HHRA found that contaminants with potential increase cancer risk include inorganic arsenic and PCBs and those with the potential to increase non-cancer risks included cadmium, copper, mercury and PCBs. In addition, potential risks were identified to aquatic-dependent wildlife from benzo(a)pyrene (a PAH), PCBs, coper, lead, mercury, and zinc. Based on the studies performed for the Draft Technical Report, the primary contaminants of concern (COCs) are copper, mercury, heavy-weight PAHs, PCBs, and tributyltin. The secondary COCs are arsenic, cadmium, lead, and zinc.

An EIR is currently being prepared to evaluate the proposed dredging and capping project, which proposes to dispose of dredged sediments at an off-site landfill (LSA, 2011). The Draft HHMTR prepared for the Shipyard Sediment Site EIR provides a detailed description of the regulatory framework, regional environmental setting, and SOPs for sediment dredging operations (Geosyntec, 2011). This HHMTR provides a summary of the applicable information presented in the Geosyntec HHMTR; therefore, for a more detailed description, please refer to the Geosyntec HHMTR.

5.3. Adjacent Hazardous Materials Properties

Four adjacent properties were listed on the DTSC Envirostor Database and/or the SWRCB GetoTracker Database. Based on a review of the regulatory database, impacts to soil, groundwater, and sediments have been documented at the site and adjacent properties. Discussion of the environmental setting of the site is provided in Section 6.1. The following provides a discussion of the adjacent hazardous materials properties, which may have impacted soil, groundwater, and/or sediments in the project area.

- **U.O.P. Inc. – Fluid Systems Division (2980 North Harbor Drive)**: The facility is listed on Envirostor as a Corrective Action. A Corrective Action property is defined as a property that treated, stored, disposed, or transferred hazardous waste at which investigation or clean up activities occurred that were either permitted or eligible for a permit. The status of the facility is listed as inactive, needs evaluation.

- **General Dynamics Convair (2980 North Harbor Drive):** The facility is listed on GeoTracker has having a closed leaking underground storage tank (LUST) case. The case was reported as having impacted soil only with aviation fuel and was closed in 1996.

- **U.S. Coast Guard Facility (2710 North Harbor Drive):** This facility was listed on the Envirostor database as a Military Evaluation facility and on the GeoTracker database as a Cleanup Program Site and as having a closed LUST case.

  - The Envirostor listing indicates that the facility is listed as a Formerly Used Defense Site (FUDS) that is inactive and needs evaluation. However, the facility is currently operating as a military facility and is not listed on the U.S. Army Corps of Engineers (USACE) FUDS database as a site where the USACE has performed or is planning to perform work. Therefore, it is possible that this listing is an error. A phone call has been placed to the USACE to clarify this listing, which was not returned as of the date of this report.

  - The GeoTracker Cleanup Program site listing indicates that the case was closed as of 1987; however, no additional information was provided.

  - The GeoTracker LUST case listing indicates that the case was a release of aviation fuel to groundwater that was closed in 2001; however, no additional information was provided.

- **Teledyne Ryan Aeronautical (2701 North Harbor Drive):** The facility is listed on the GeoTracker database as a Cleanup Program Site and has having four closed LUST cases.

- Three LUST cases are listed as having impacted soil only with diesel (2 cases) or gasoline (1 case). The cases are listed as closed in 1992, 1994, and 2000. One case is listed has having impacted groundwater with a release of diesel fuel; however, the case was closed in 2004 and no further action was required.
- The Cleanup Program Site listing indicates that the facility is currently undergoing remediation. This listing includes all work performed under WDR 98-21 and CAOs 86-92 and R9-2004-0258, as discussed in Section 6.1. The wastes discharged at the former facility include PCBs, VOCs, semi-volatile organic compounds (SVOCs), PAHs, metals, and total petroleum hydrocarbons.

A case-closed status generally indicates a lower likelihood that a release continues to be a significant source of impacts to groundwater; however, cases in the 1980s and early 1990s were often justified for closure using rationale and/or methodology that may not be considered to be the current standard of care, and closure is generally based on regulatory action levels, which can change over time. Therefore, while there is a lower likelihood that closed cases represent a significant concern to the project area, compared to potential impacts from open cases, it is possible that unauthorized releases, which have been granted closure, may have impacted soil and/or groundwater at the project area.

6. SENSITIVE RECEPTORS

The locations of potential sensitive receptors to hazardous materials/waste impacts, such as schools and hospitals, were documented during review of background information (e.g., Thomas Brothers Guide maps, topographic maps, online resources such as Google Earth). The DTSC Envirostor online database was also consulted for locations of existing and proposed schools. Hospitals, schools, daycare, and/or education-related facilities were not noted on site or within 0.8-mile of the site.

7. IMPACT ANALYSIS AND MITIGATION MEASURES

This section discusses the potential impacts related to the implementation of this project as described in the Project Description (LSA, 2011). Although a final project design has not yet been selected, the project description provides sufficient information to evaluate the impacts typical of proposed demolition, dredging, and filling activities. In addition to the SOPs and mitigation measures described below, existing regulations (e.g., California Water Code, Health and Safety Code, Harbors and Navigation Code, etc.) and federal and state permit requirements (e.g., storm water, fill placement), may also provide specific best management practices (BMPs) or mitigation measures that will be implemented and act to further mitigate potentially significant impacts.

7.1. Spill/Leaks of Petroleum Products

Demolition and construction equipment may spill/leak fuels, oils, or other hazardous fluids during normal operations, refueling, or maintenance. However, any leaks/spills that occur would likely be localized, short-term, and cleaned up immediately in accordance with existing regulations for the transportation, handling, and disposal of hazardous materials (e.g., Code of Federal Regulations Title 40, California Code of Regulations Title 22, etc.) Therefore, the impacts would be considered less than significant under CEQA and mitigation measures would not be required.

7.2. Disturbance of Contaminated Sediments

Sediments at the site and the dredged sediments from the Shipyard Sediment Site being utilized as fill material are documented to contain levels of contaminants above regulatory limits. For the purposes of this report, contaminated sediments are assumed to be saturated and therefore include both the sediment particles and associated water. Disturbance of the sediments can cause a release of the contaminants that may result into an impact to human health and the environment. Contaminated sediments may be disturbed during dredging, storm drain extension, storage, rock placement, transport, filling, and disposal operations.

The Draft HHMTR prepared for the Shipyard Sediment Site EIR provides a detailed description of the SOPs for dredging activities, possible impacts, and appropriate mitigation measures related to the disturbance of contaminated sediments within San Diego Bay during the performance of similar project activities (Geosyntec, 2011). The potential impacts discussed in the report include, but are not limited to, the following:

- Dredging Impacts, Section 4.1: re-suspension of sediments due to dredging, operator over filling of the bucket, debris preventing full closure of the bucket, barge propeller wash, silt curtain placement, damage of silt curtain, spillage from barge overloading, equipment failure, or vessel collision.

- Sediment Unloading and Transport Impacts, Section 4.2: spillage of sediments back into the water column or onto the land surface during sediment unloading to transport vehicles and spillage of sediments from transport vehicles due to overfilling, operator error.

- Sediment Storage/Drying Impacts, Section 4.3: airborne release of drying agent, airborne release of sediment contaminants through volatilization or particulate transport, and breach in containment.

- Load Out, Transport, and Disposal Impacts, Section 4.4: worker contact with sediments, spillage due to overfilling of transport vehicles or operator error.

Geosyntec's Draft HHMTR concluded that the potential mitigation measures described in the report are capable of mitigating these potential impacts to less than significant levels. Since the project activities associated with sediment disturbance at the Shipyard Sediment Site are comparable to the proposed activities for the Convair Lagoon CDF construction, employing the same mitigation measures would mitigate the potential impacts for this project to less than significant levels.

In addition to the impacts discussed in the Geosyntec report, contaminated sediments may also be disturbed during filling operations, during extension of the storm drains post-CDF construction, or subsurface excavation activities post-CDF construction.

- As the dredged fill is placed, some of the sediments will be suspended in the bay water and may flow back into the bay. However, the placement of contaminated sediment from the Shipyard Sediment Site would not take place until after the containment barrier has been constructed and filling operations will occur at a pace that will allow displaced water to flow through the containment barrier prior to entering San Diego Bay. The containment barrier rock and filter within the barrier will act as a filter to minimize sediment particles from leaving the CDF (SAIC, 2009) Controlled placement of the dredged material and the design of the containment barrier are considered adequate to mitigate this potential concern to less than significant levels.

- If the construction of the storm drain extensions, or other subsurface excavation activities (e.g., utility installation or repair), are performed after the construction of the CDF, sediments placed in the CDF will need to be excavated to allow for the placement of the pipelines. A soil/sediment management plan would be prepared to detail the appropriate handling, storage, reuse, and disposal of the impacted sediments to minimize the potential for a release and impacts to the human health or the environment. The plan would also require that the top portion of the backfill be clean, imported fill material to further minimize the potential for a release. These methods are considered adequate to mitigate this potential concern to less than significant levels. In addition, the RWQCB may issue a CAO and WDRs specific to the site that may specify land use restrictions/activity and use limitation to minimize future disturbance of the sediments within the CDF.

Therefore, the potential significant impacts associated with the disturbance of contaminated sediments are considered less than significant with the implementation of the SOPs, mitigation measures, permit requirements, and regulations described above.

7.3. Release of Contaminated Water

Groundwater at the site and vicinity has been documented to be impacted by levels of contaminants above regulatory limits. Contaminated groundwater may be generated during dewatering activities associated with the extension of storm drains, if the work is performed after filling operations are complete. The water may be released to the surrounding land or into San Diego Bay due to a breach in the containment vessel or in the transport piping or overfilling of the containment vessel. The water generated during dewatering activities will likely be pumped directly into aboveground tanks with a sufficient designed capacity, pumped to an on-site treatment system before disposal, or disposed of directly into the sanitary sewer, in accordance with applicable permits. Aboveground tanks and transport piping would be inspected routinely for potential leaks or damage to avoid a potential release.

The use of appropriate storage containers and regular inspections of the containers and dewatering equipment are considered adequate to mitigate this potential concern to less than significant levels.

7.4. Summary of Impacts

The potential significant impacts identified as associated with the proposed project include hazards to the public and/or the environment from the routine transport, use, or disposal of hazardous materials or reasonably foreseeable upset and accident conditions resulting in a release of hazardous materials into the environment. A copy of the CEQA Initial Study Checklist for Hazards and Hazardous Materials is provided in Appendix A.

The final mitigation measure utilized may be modified based on the final project design details; however, with the judicious application of appropriate design parameters, existing standardized construction and dredging plans and practices, routine monitoring during construction, and mandated regulatory oversight (e.g., CAOs, WDRs), the potential mitigation measures described above are capable of mitigating the potential impacts to less than significant levels.

8. LIMITATIONS

The environmental services described in this report have been conducted in general accordance with current regulatory guidelines and the standard-of-care exercised by environmental consultants performing similar work in the project area. No warranty, expressed or implied, is made regarding the professional opinions presented in this report. Please note that this study did not include an evaluation of geotechnical conditions or potential geologic hazards.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Ninyo & Moore should be contacted if the reader requires any additional information or has questions regarding the content, interpretations presented, or completeness of this document.

Our conclusions, recommendations, and opinions are based on an analysis of the observed site conditions and the referenced literature. It should be understood that the conditions of a site could change with time as a result of natural processes or the activities of man at the subject site or nearby sites. In addition, changes to the applicable laws, regulations, codes, and standards of practice may occur due to government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which Ninyo & Moore has no control.

9. REFERENCES

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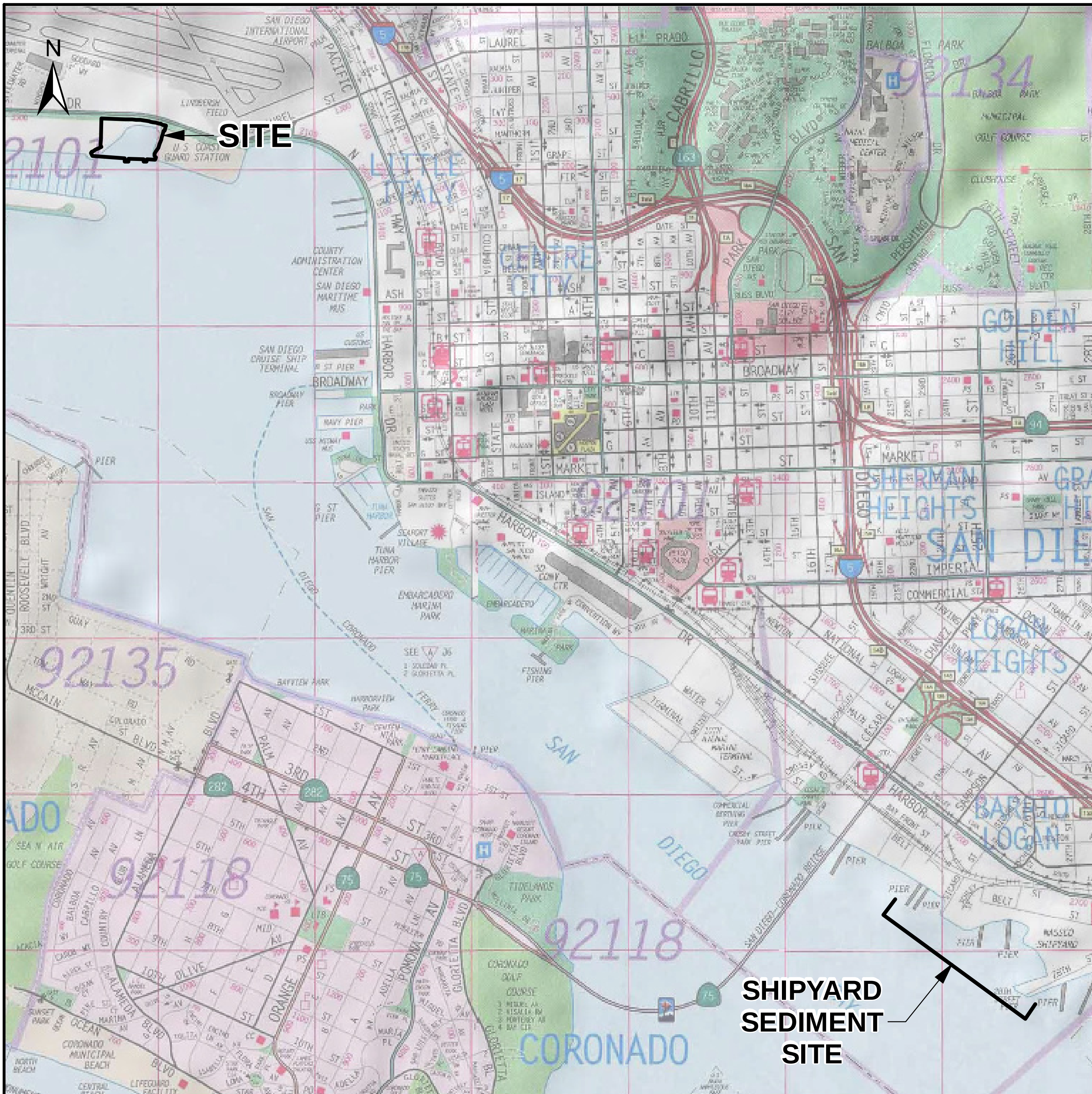

SOURCE: 2008 Thomas Guide for San Diego County, Street Guide and Directory; Map © Rand McNally, R.L.07-S-129

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE

SCALE IN FEET

0 1,200 2,400 4,800

Ninyo & Moore		SITE LOCATION	FIGURE
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106997003	5/11		

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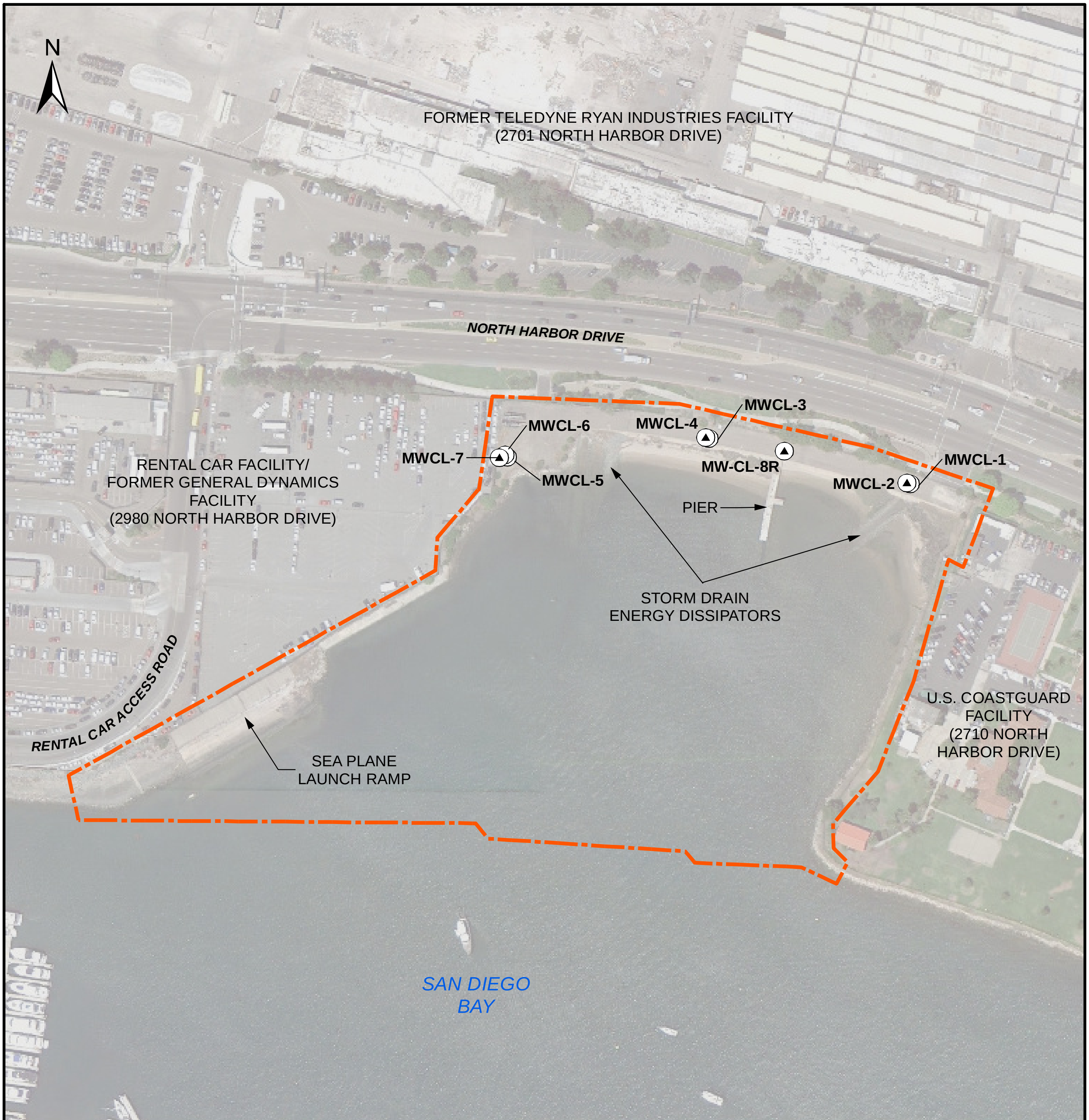

SOURCE: Aerial Imagery - Photo Date: August, 2010; (c) Google Earth, 2011

LEGEND

SITE BOUNDARY

SCALE IN FEET

0 100 200 400

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore		SITE AND VICINITY	FIGURE
PROJECT NO.	DATE	SHIPYARD SEDIMENT ALTERNATIVE CONVAIR LAGOON SAN DIEGO, CALIFORNIA	2
106997003	5/11		

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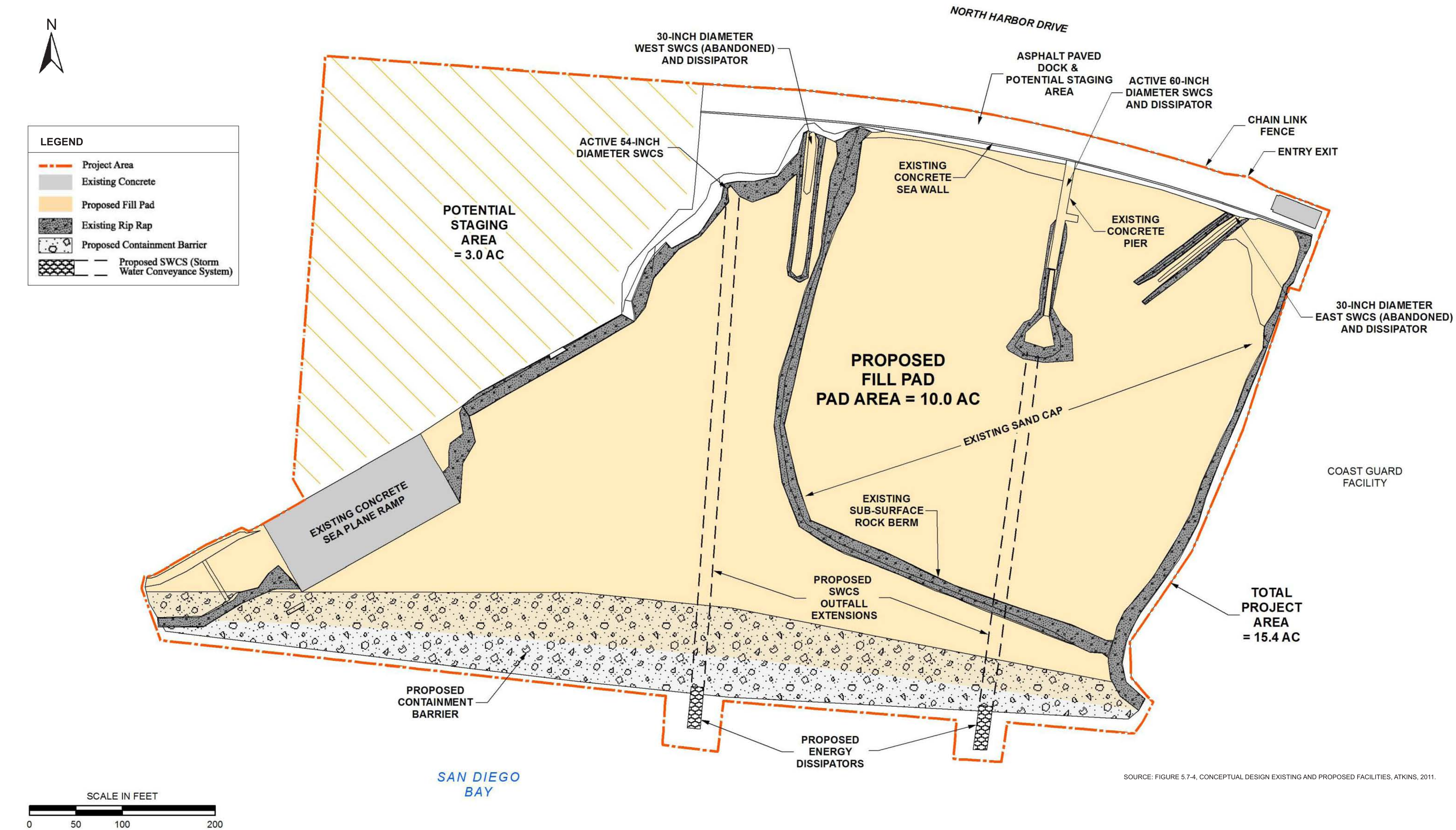

SOURCE: FIGURE 5.7-4, CONCEPTUAL DESIGN EXISTING AND PROPOSED FACILITIES, ATKINS, 2011.

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

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Ninyo & Moore		CONCEPTUAL DESIGN EXISITNG AND PROPOSED FACILITIES	FIGURE
PROJECT NO.	DATE	SHIPYARD SEDIMENT ALTERNATIVE CONVAIR LAGOON SAN DIEGO, CALIFORNIA	3
106997003	5/11		

APPENDIX A

CEQA INITIAL STUDY CHECKLIST, SECTION VIII

CEQA INITIAL STUDY CHECK LIST

VIII. HAZARDS AND HAZARDOUS MATERIALS - Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?		X		
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		X		
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?		X		
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?			X	
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X

APPENDIX O

WATER QUALITY TECHNICAL STUDY SHIPYARD SEDIMENT ALTERNATIVE ANALYSIS CONVAIR LAGOON

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WATER QUALITY TECHNICAL STUDY
SHIPYARD SEDIMENT
ALTERNATIVE ANALYSIS
CONVAIR LAGOON
SAN DIEGO, CALIFORNIA

PREPARED FOR:

Brown & Winters
120 Birmingham Drive, Suite 110
Cardiff By The Sea, California 92007

PREPARED BY:

Ninyo & Moore
Geotechnical and Environmental Sciences Consultants
5710 Ruffin Road
San Diego, California 92123

May 27, 2011
Project No. 106997003

25 YEAR ANNIVERSARY 1986-2011 Ninyo & Moore

May 27, 2011
Project No. 106997003

Ms. Wentzelee Botha
Brown & Winters
120 Birmingham Drive, Suite 110
Cardiff By The Sea, California 92007

Subject: Water Quality Technical Study
Shipyard Sediment Alternative Analysis
Convair Lagoon
San Diego, California

Dear Ms. Botha:

At your request, we have prepared this Water Quality Technical Report for the above-referenced project. The report has been prepared in accordance with applicable portions of our proposal, P-20189, dated March 11, 2011. This report presents our findings and conclusions regarding overall water quality conditions at the site, significance of potential impacts, potential mitigation measures, and constraints potentially affecting the project.

We appreciate the opportunity to be of service to you on this project.

Sincerely,
NINYO & MOORE

Lisa Bestard, REA
Senior Project Environmental Scientist

Stephan A. Beck, PG 4375
Manager, Environmental Sciences Division

LB/SB/gg

Distribution: (1) Addressee

TABLE OF CONTENTS

1. INTRODUCTION

This Water Quality Technical Report (WQTR) has been prepared as part of the Shipyard Sediment Alternative Analysis, Convair Lagoon, San Diego, California (Figure 1). Convair Lagoon Alternative involves the construction and filling of a confined disposal facility (CDF) for the placement of contaminated marine sediment dredged from the Shipyard Sediment Site. For a detailed project description, please reference the Alternative Description section in the Administrative Draft Program Environmental Impact Report (EIR), Shipyard Sediment Remediation Project, San Diego Bay.

The purpose of this WQTR is to evaluate overall water quality conditions at the site, identify potential significant impacts to water quality from the project, describe potential mitigation measures, and identify constraints that may potentially affect the project (e.g., permitting, dredge material effluent quality). The report document, with respect to the California Environmental Quality Act (CEQA), the significance of impacts from the proposed project with respect to water quality, and to discuss measures that can be implemented to reduce or mitigate the potential impacts.

A Draft EIR is currently being prepared by others to evaluate the proposed dredging and capping project at the Shipyard Sediment Site (LSA, 2011). The Draft WQTR prepared for the Shipyard Sediment Site EIR provides a detailed description of the regulatory setting and regional site conditions (Geosyntec, 2011). This WQTR provides a summary of the applicable information presented in the Geosyntec WQTR; therefore, for a more detailed description, please refer to the Geosyntec WQTR.

2. SCOPE OF WORK

Ninyo & Moore’s scope of work for this WQTR included the activities listed below.

- Review physical setting information (e.g., topographic, geologic maps, groundwater data) pertaining to the project area.
- Review of readily available maps, reports, and other water quality documents pertaining to the project area, including, but not limited to, clean up and abatement orders (CAOs), waste discharge requirements (WDRs), and technical reports prepared by others.
- Perform a site reconnaissance.

- Prepare this WQTR report presenting a summary of our findings and conclusions regarding overall water quality conditions at the site, significance of potential impacts, potential mitigation measures, and constraints potentially affecting the project.

3. SITE LOCATION, DESCRIPTION, AND HISTORY

The following sections summarize the sit location, description, and background:

3.1. Site Location

The Convair Lagoon Alternative site consists of approximately 15 acres of water and land located within the San Diego Bay in the City of San Diego, California. The site is bounded by the San Diego Bay to the south; North Harbor Drive, a greenway, and the San Diego International Airport to the north; the United States North Harbor Drive Coast Guard Facility (U.S. Coast Guard Station) to the east; and a rental car parking lot to the west (Figure 1). The site is within the jurisdiction of the San Diego Unified Port District (District) and is located in Planning District 2 (Harbor Island/Lindbergh Field), Planning Subarea 24 (East Basin Industrial) of the 2010 Port Master Plan.

3.2. Site Description

The Convair Lagoon Alternative site is an area of the San Diego Bay that consists of open water, submerged facilities, and land. The land facilities on the Convair Lagoon Alternative site are located along the periphery, with the exception of the southern boundary, which is San Diego Bay. Land facilities include an asphalt paved area along the northern boundary, parallel to North Harbor Drive; a concrete seawall or rip-rap located along the north, east, and west shorelines; and an abandoned concrete sea plane marine ramp located along the southwesterly interface between the land and water. The western and northwestern part of the site is a rental car parking lot.

The submerged facilities on the Convair Lagoon Alternative site include a sand cap, rock berm, and storm drains. The submerged area of the site includes an approximate 7-acre sand cap that was designed to isolate sediment contamination associated with former Teledyne

Ryan (TDY) Aeronautical operations. In addition to the sand cap, submerged facilities on the site include a subsurface rock berm and multiple submerged storm drains. The submerged rock berm transects the site from the northwest corner to the southeast corner in an “L” shape to contain the existing sand cap. On the northern shoreline, a 60-inch diameter storm drain, a 54-inch diameter storm drain, and two 30-inch diameter storm drains outlet into the lagoon. The two 30-inch diameter storm drains, which served the former TDY facility, are abandoned in place or discharge runoff from Harbor Drive. On the western shoreline, three smaller storm drains outlet into the lagoon.

The adjacent surrounding areas consist of a greenway with a bicycle path is located to the north, parallel to North Harbor Drive. Directly west of the site is a rental car parking lot, while to the east is the U.S. Coast Guard Station. The San Diego Bay and a boat anchorage area (Anchorage A-9) are located to the south of the site.

3.3. Background

The surrounding shoreline of Convair Lagoon was previously shallow portions of the San Diego Bay that were filled with dredge sediment. The earliest information regarding dredging and fill operations in the vicinity of the alternative site is from 1921, when the northeastern shoreline of the bay was between present-day Pacific Highway and California Street. In the 1920s and 1930s, the area north of present-day West Laurel Street and North Harbor Drive, encompassing the eastern portion of the present-day San Diego Airport, was filled with material dredged from the bay. A dredging pipeline, (later converted to a 54-inch reinforced concrete storm drain), extended from the northern portion of the filled land, south to the bay, and discharged into the Convair Lagoon. In the mid-1930s, dredging operations filled the area where the U.S. Coast Guard Station is located east and adjacent to the alternative site. By 1939, a concrete pier was constructed above the previously mentioned storm drain on the site. In the early 1940s, dredging operations filled the area west of the site. Convair Lagoon is the unfilled area between the U.S. Coast Guard Station and the filled area to the west of the site. Throughout the years, multiple improvements to the site have been constructed and removed, including additional storm drains and other piers.

On October 17, 1986, the San Diego Regional Water Quality Control Board (San Diego Water Board) Executive Officer issued "*Cleanup and Abatement Order No. 86-92 for Teledyne Ryan Aeronautical near Lindbergh Field, San Diego County*" for the discharge of polychlorinated biphenyl (PCBs), several trace metals, and volatile organic compounds to the storm drains on TDY property and to the Convair Lagoon portion of the San Diego Bay. CAO 86-92, as amended, required TDY to construct a sand cap on the San Diego Bay bottom in Convair Lagoon to isolate the existing sediment contamination within the lagoon from the environment.

In 1996, the PCB contamination in Convair Lagoon was remediated by the Convair Lagoon Capping Project. During the PCB remediation, the existing subsurface rock berm was constructed (Figure 2) and a sand cap was placed behind the rock berm. The majority of the existing sand cap is submerged, although construction of the cap converted approximately 1,400 square feet of an intertidal area to upland.

Recent bay deposits underlie the sand cap and PCB contaminated sediment. Bay deposit materials typically consist of interlayered dark gray, wet, loose, fine silty sand and silt and soft, sandy clay. Old paralic deposits underlie the bay deposits and typically consist of medium dense sand and stiff clay.

Subsequent to installation of the sand cap over the PCB contaminated sediments in Convair Lagoon, monitoring has discovered PCB contamination on top of the cap, presumably the result of contaminated sediment coming from the 60-inch storm drain. In response to this discovery, the San Diego Water Board issued CAO R9-2004-0258, as amended, which addresses the cleanup and abatement of wastes discharged to land at the former TDY site. According to the CAO, significant wastes discharged to soil and groundwater at the site must be identified and cleaned up, and the discharge of any wastes to Convair Lagoon and San Diego Bay must be abated. A subsequent enforcement order will be necessary to assess and cleanup wastes discharged from landside sources to the marine sediments in Convair Lagoon and San Diego Bay. The CAO states that soil and groundwater must be cleaned up and waste discharges abated prior to conducting remedial actions in Convair Lagoon and

San Diego Bay to prevent potential recontamination of the marine sediments in the bay. Therefore, the Convair Lagoon Alternative would commence construction once the PCB source is eliminated.

Convair Lagoon is associated with two active CAOs, 86-92 and R9-2004-0258, and WDR Order No. 98-21. A brief summary of these documents is provided below.

- **CAO 86-92 and Amendments:** The CAO was issued on October 17, 1986 to TDY for the discharge of PCBs, metals, and volatile organic compounds (VOCs) into the storm water conveyance system (SWCS) on the facility that discharged into Convair Lagoon (Figure 2). Sediments in the lagoon were found to contain PCBs at concentrations ranging from 1 to 1,800 milligrams per kilogram (mg/kg) as dry weight from the surface to depths of 10 feet. Between 1986 and 1998, PCB wastes were removed from the SWCS at the facility. The CAO required a sand cap be constructed to isolate the contaminated sediments from the environment. An approximately 7-acre sand cap was completed at the site in 1998 that covered areas where sediments contained PCBs at concentrations exceeding 4.6 mg/kg as dry weight. As part of the capping project, approximately 1,400 square feet of intertidal land was converted to upland.

- **WDR 98-21:** Subsequent to the construction of the sand cap under CAO 86-92, the Regional Water Quality Control Board (RWQCB) issued WDR 98-21, Closure and Post-Closure maintenance of the Convair Lagoon Sand Cap, which regulates the sand cap and associated monitoring, maintenance, and, repairs. The WDR states that the action level to trigger repair and or investigation of the cap or cleaning of the SWCS at the TDY facility is 4.6 mg/kg dry weight in the sediments. The document also provides a list of water quality objectives that apply to the water within Convair Lagoon. Some of objectives provided are for dissolved oxygen, pH, oil and grease, suspended sediment load/discharge rate, turbidity, and toxicity.

- **CAO R9-2004-0258 and Amendments:** The CAO states that PCBs, VOCs, and heavy metals from the former manufacturing activities at the TDY facility have, “caused and threaten to cause conditions of pollution, contamination, and nuisance by exceeding applicable water quality objectives for toxic pollutants to San Diego Bay.” The document also states that PCB concentrations have continued to be found in the SWCS at the TDY facility even after clean out and replacement of portions of the system. In addition, PCBs discharged from the SWCS are being deposited on the surface of the sand cap at Convair Lagoon. PCBs have been detected on the surface of the sand cap at concentrations ranging from 1.77 to 20.44 mg/kg.

  A tentative addendum (number 4) to the CAO was issued on April 13, 2011, which states that there are three areas of concern with regard to the transport of wastes from the TDY facility to Convair Lagoon: 1) Convair Lagoon shoreline groundwater, 2) sediment in the

SWCS that empties into Convair Lagoon/San Diego Bay, and 3) VOC-impacted groundwater seeping into the 54-inch and 60-inch storm drains. Although sediment transport to the lagoon is a concern, the storm drain inlets and laterals on the TDY facility were capped with concrete; therefore, no additional input of sediment to the SWCS from the TDY facility is known to be occurring. However, there is the potential for PCB impacted sediments to be transported to Convair Lagoon from sites upgradient of the TDY facility that continue to discharge into the SWCS. In addition, there is a potential risk to human health associated with the incidental ingestion of or contact with the sediments in the lagoon. The addendum requires that visible sediment should be removed from within the 60-inch storm drain and associated energy dissipater.

4. HYDROGRAPHIC SETTING

This section summarizes the regional hydrogeologic setting and site hydrogeologic conditions.

4.1. Topography

The landside portions of the site are located at approximately 10 feet above mean sea level (United States Geological Survey [USGS], 1996) or approximately 12 feet mean lower low water (MLLW). The floor of the lagoon ranges in elevation from approximately 10 feet above MLLW to -15 feet MLLW (Ninyo & Moore, 2011).

4.2. Surface Waters

A portion of the site is within the San Diego Bay. According to the State Water Resources Control Board (SWRCB) Water Quality Control Plan for the San Diego Basin (Basin Plan), the San Diego Bay has been assigned beneficial uses for industrial service supply, navigation, contact and non-contact water recreation, commercial and sport fishing, preservation of biological habitats of special significance, estuarine habitat, wildlife habitat, rare/threatened/endangered species, marine habitat, migration of aquatic organisms, spawning/reproduction/early development, and shellfish harvesting (SWRCB, 1994).

The SWRCB's California Ocean Plan states that the beneficial uses of ocean waters of the state include the same beneficial uses listed in the Basin Plan with the addition of mariculture and excluding estuarine and wildlife habitats (SWRCB, 2005).

4.3. Groundwater

According to the SWRCB Water Quality Control Plan for the San Diego Basin, the project area is located within the Lindbergh Hydrologic Sub Area (908.21) of the San Diego Mesa Hydrologic Area within the Pueblo San Diego Hydrologic Unit (907.00). Groundwater in this hydrologic subarea has been excepted from municipal supply and does not currently have existing or potential beneficial uses (SWRCB, 1994).

There are eight groundwater monitoring wells located on the landside portion of the site (MWCL-1 through MWCL-8R). The monitoring wells are currently being monitored under CAO R9-2004-0258, associated with former TDY located adjacent to the north of the site beyond Harbor Drive (2701 North Harbor Drive). Based on a review of the October 2010 monitoring report on file on the SWRCB GeoTracker database, depth to groundwater at the site generally ranges from 6 to 11 feet below ground surface and generally flows south toward Convair Lagoon (Geosyntec Consultants, 2010).

5. REGULATORY SETTING

The following provides a summary of water-quality related regulations that apply to the site. For a more detailed description see Geosyntec's WQTR for the Shipyard Sediment Site (Geosyntec, 2011).

- **Clean Water Act (CWA):** The CWA is a piece of Federal legislation that protects the waters of the U.S. from pollution by setting water quality standards for surface water and limiting discharge of effluents into those waters.
    - Section 404 of the CWA is the primary Federal statute regulating the discharge of dredged and/or fill material into waters of the U.S. This project will require a 404 permit from the U.S. Army Corps of Engineers (USACE) for the discharge of dredged sediments and fill to San Diego Bay.
    - Section 401 of the CWA requires certification from the State agency that the project will comply with water quality standards. This project will require a 401 permit from the RWQCB before a 404 permit can be obtained from the USACE.
    - Section 303(d) requires that impaired water bodies are identified and listed, after which a total maximum daily load (TMDL) must be developed for each contaminant. Convair Lagoon is within San Diego Bay, which is listed as a 303(d) impaired water body for PCBs. A TMDL for PCBs in San Diego is projected to be completed in 2019.

- **Rivers and Harbors Act, Section 10**: Requires USACE approval prior to the construction of a structure in or over navigable waters of the U.S. This project will require a Section 10 permit for the construction of the CDF.

- **Marine Protection, Research, and Sanctuaries Act of 1972, Section 103:** Requires authorization from the USACE for the transportation of dredged material for the purpose of dumping into ocean waters, where the dumping will not unreasonably degrade or endanger human health, welfare, or amenities, or the marine environment, ecological system, or economic potentialities. A Section 103 permit will not be required because the site is landward of the California Territorial Sea Baseline (USGS/Boemre, 2011).

- **Porter-Cologne Water Quality Control Act:** The Porter-Cologne Act gives the SWRCB and RWQCB authority to protect water quality and also established reporting requirements for unintended discharges of hazardous substance, sewage, or petroleum products.

- **California Ocean Plan:** The SWRCB's California Ocean Plan identifies beneficial uses for ocean waters of the State (see Section 5.2), establishes water quality objectives for bacterial, physical, chemical, and biological characteristics and radioactivity, and provides general requirements for the management of waste discharged to the ocean (SWRCB, 2005).

- **Basin Plan:** The SWRCB's Basin Plan is the State's implementation of the CWA through the Porter-Cologne Water Quality Control Act. The plan identifies beneficial uses (see Section 5) and water quality goals for waters of State, including ocean waters, enclosed bays and estuaries, and coastal lagoons (SWRCB, 1994).

- **National Pollutant Discharge Elimination System (NPDES) Program:** The CWA Section 402(p) establishes a framework for regulating municipal and storm water discharges under the NPDES program and requires that storm water associated with industrial activity that discharges directly to surface waters or indirectly through storm drains must be regulated by an NPDES permit. The site may be subject to two NPDES permits, as described below, or the site/project may be issued an individual permit by the RWQCB.

    - **Industrial Storm Water General Permit, Order 97-03-DWQ:** This NPDES permit regulates discharges associated with 10 categories of industrial activities. The permit requires the development of a Storm Water Pollution Prevention Plan (SWPPP) and monitoring plan, which identifies potential sources of pollutants and the means to manage or reduce the storm water pollution from these sources (e.g., best management practices [BMPs]).

      The Unified Port District of San Diego (District) Environmental Services Department has prepared a Jurisdictional Urban Runoff Management Program Document (JURMP) for all areas under the jurisdiction of the District, in accordance with the requirements of San Diego Water Board Order No. 2007-0001 (NPDES Permit #CAS0108758), and serves as the District's Municipal Storm Water Permit. This document describes the activities that the District has undertaken, is undertaking, or will undertake, to reduce discharges of pollutants and urban runoff flow to the municipal separate storm sewer system to the maximum extent practicable. The JURMP was developed to assist the District in identifying causes or contributions to water quality impacts, tracking urban runoff related activities, and to implement to the maximum extent practicable BMPs to reduce or eliminate pollutants from reaching receiving waters within the District's jurisdiction.

One component of the JURMP is to prepare and implement Jurisdictional Standard Urban Storm water Mitigation Plan (SUSMP). The SUSMP has been developed by the District to address post-construction urban runoff pollution from new development and redevelopment projects that fall under "priority development project" categories. The goal of the District's SUSMP is to develop and implement practicable policies to ensure to the maximum extent practicable that development does not increase pollutant loads from a project site and considers urban runoff flow rates, velocities and durations. This goal may be achieved through site-specific controls and/or drainage area-based or shared treatment controls. The SUSMP was developed to meet the requirements of the Countywide Model SUSMP, which was approved by the RWQCB on January 2, 2009.

  - **Construction General Permit, Order 2009-0009-DWQ:** This NPDES permit is required for construction sites with total disturbed areas of 1 or more acres. Construction activities subject to the permit include grading, stockpiling, and excavation. The permit requires a SWPPP that must include a visual monitoring program, a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs, and a sediment monitoring plan, if the site discharges directly to a water body listed on the 303(d) list for sediment (e.g., San Diego Bay). The District's JURMP may satisfy the requirements for the Construction General Permit.

- **WDR 98-21:** WDR 98-21, Closure and Post-Closure maintenance of the Convair Lagoon Sand Cap, regulates the sand cap and associated monitoring, maintenance, and repairs. The WDR states that the action level to trigger repair and or investigation of the cap or cleaning of the SWCS at the TDY facility is 4.6 mg/kg dry weight in the sediments. The document also provides a list of water quality objectives that apply to the water within Convair Lagoon. Some of objectives provided are for dissolved oxygen, pH, oil and grease, suspended sediment load/discharge rate, turbidity, and toxicity. Although this WDR is currently in place for the site; however, the RWQCB may elect to issue an additional WDR for the site.

- **General WDRs for Construction Non-Storm Water Discharges:** The RWQCB may issue general WDRs to regulate the non-storm water, construction-related discharges from activities such as dewatering. The permit will include requirements for notifications, testing, and reporting of dewatering and testing-related discharges.

6. IMPACT ANALYSIS AND MITIGATION MEASURES

Sediments may be resuspended during dredging, fill placement, and barge loading/unloading operations, as well as through spillage, prop wash, and vessel anchoring. The sediments at the site are documented to contain PCBs and the dredged sediments from the Shipyard Sediment Site are documented to contain copper mercury, zinc, organotins, high molecular weight polynuclear aromatic hydrocarbons (PAHs), and PCBs (i.e., COCs). Therefore, potentially significant, but temporary impacts to benenficial uses in San Diego Bay may occur as a result of the resuspension of sediments that may be re-deoposited outside of the CDF area, conatimants that may dissolve into the water column and be available for uptake by marine organisms, and increased turbidity. The potential impacts to water quality include low dissolved oxygen, changes in pH, increased turbidity, and toxicity (i.e., from COCs). If one or more of the impacts described above occur during the project, it may impact the beneficial uses of San Diego Bay.

The filling operations will result in the conversion of approximatley 10 acres of intertidal and submerged lagoon areas into upland areas, which will alter the drainage patterns at the site and potentially increase the amount of surface run-off.

The potential impacts to water quality and mitigation measures are described below. Although a final project design has not yet been selected, the project description provides sufficient information to evaluate the impacts typical of proposed demolition, dredging, and filling activities.

6.1. Demolition Activities

Demolition of existing improvements (i.e., existing concrete pier, riprap and concrete mattress energy dissipaters, and concrete seaplane ramp) is anticipated as part of the project. The improvements are will be removed from the site or reused as fill material in deeper fill areas. Demolition will be conducted from the existing shoreline using tracked excavators with breaker hammers, loaders, and dump trucks and demolition debris will be removed from waters daily and stockpiled until disposal. However, sediments may be disturbed during the removal of submerged or partially submerged structures. Impacts and mitigations associated with the resuspension of sediments are discussed in Section 7.2.

Sediments may also be disturbed during the placement of debris as fill material. If the debris is utilized as fill material, the placement will occur after the construction of the containment barrier, which will minimize the potential impacts to water quality. Additional impacts and mitigation measures associated with the placement of fill is discussed in Section 7.5.

In addition to the mitigation measures discussed in Section 7.2 and 7.5, demolition activities will be scheduled during low tides, if feasible, to expose as much of the submerged structures as possible. The potentially significant impacts associated with the demolition activities are considered less than significant with the implementation of the SOPs, mitigation measures, permit requirements, and regulations described above and in Sections 7.2 and 7.5.

6.2. Dredging Activities

Dredging may be performed during construction of the containment barrier foundation. Dredged sediments may be utilized as fill material within the CDF area or it may be stored and dried on site prior to off-site disposal. If dredging is performed, the sediment will be dredged using an environmental clamshell bucket and either placed into sealed barges on the waterside or transported hydraulically (i.e., by pumped pressure) or by crane and clamshell from the adjacent shoreline into sediment containment areas. Barges would be unloaded using a crane-based clamshell bucket and transferred to a sediment containment area. If the dredged sediment requires off-site disposal, the material may be mixed with a drying agent to facility dewatering and drying. Once the material is sufficiently dry, the material would be loaded into covered trucks and hauled to the appropriate disposal facility.

Water quality may be temporarily impacted during dredging activities due to increased turbidity from sediment resuspension caused by the dredge bucket or spillage during loading/unloading and leaking/spilling of turbid water from the dredge bucket or barge barriers back into the bay. In addition, water quality impacts related to contaminated suspended sediments could be associated with the remobilization of contaminants bonded to the sediments. COCs may be released into the water column and be transported out of the CDF area by waves, currents, or tides. However, the potential for COCs to dissolve into the water column is considered minimal.

Dredging operations will be designed to minimize the turbidity caused during sediment removal. In addition, permitting from the USACE may require the use of a silt curtain to contain suspended solids during containment barrier construction. A reduction in the turbidity generated during dredging will subsequently reduce the water quality impacts that may be associated with COCs bound to the sediments. It is assumed that the impacts to water quality from dredging can be controlled without the use of a slit curtain; however, there is the potential that permitting may require a silt curtain be utilized and it is therefore evaluated in this document.

The potentially significant impacts to water quality during dredging operations are:

- Spills/leaks of fuels, oils, or other hazardous fluids from equipment;
- Operator overfilling the dredge bucket, barges, or trucks;
- Debris preventing closure of the dredge bucket;
- Spillage during loading/unloading;
- Vessel propeller wash; and,
- Damage to silt curtain (if required).

The potential significant impacts associated with dredging operations are considered less than significant with the implementation of standard operating procedures (SOPs), mitigation measures, permit requirements, and regulations described in this section.

6.2.1. Standard Operating Procedures

The WQTR prepared by Geosyntec for the Shipyard Sediment Site EIR provides a detailed description of SOPs that will be implemented during dredging activities to minimize the impacts to water quality (Geosyntec, 2011). A brief summary of the SOPs is provided below:

- Equipment Selection: The dredge bucket should be equipped with vertical side plates to reduce sediment loss, flatter cut edges to reduce resuspension caused by potholes, indicator switches to inform the operator if the bucket is not completely closed, and automatic monitoring systems. This will minimize the loss of sediments; however, minimal releases of resuspended sediments are anticipated to occur during dredging.

- Monitoring: A system for automatic monitoring of turbidity and other water quality parameters in the water column in the vicinity of dredging activities should be utilized to facilitate the operator to quickly adjust or modify operations to control temporary water quality impacts. The system should be equipped with an alarm system that can be set to notify the operator when specific thresholds have been exceeded. A water quality monitoring plan should also be prepared that describes the methods and documentation for the monitoring of water quality parameters. Section 7.2.3 provides additional discussion of water quality monitoring.

- Dredging BMPs: BMPs will be implemented to minimize the resuspension or spillage of sediments to minimize increase in turbidity. The BMPs will include:

  - Not stockpiling of sediments on the bay floor,
  - Ensuring the dredge bucket is fully closed before withdrawing from the water or during loading activities,
  - Rinsing the dredge bucket in, or into, a wash tank to remove sediment adhered to the bucket and confirming the bucket is clean prior to being moved back into the bay water (may not be necessary if a silt curtain is utilized),
  - Not overfilling the dredge bucket (i.e., utilizing software to provide real-time data regarding the position of the bucket and depth of cut) or the barge (i.e., utilize visual markings on the barge to indicate limits of fill),
  - Limiting multiple bites with the dredge bucket,
  - Placing dredged material carefully and limiting the bucket drop height to minimize splashing or sloshing,
  - Not using weirs to dewater the barges, and
  - Controlling barge/boat movement and speeds.

- Spills/Leaks BMPs: Spills/leads of fuel, oil, or other hazardous fluids could impair or degrade the water quality of San Diego Bay, depending on the degree of the spill. Spills are likely to be localized spills of fuel (diesel and gasoline) and lubricating oils that are toxic to marine organisms. Although the potential for the spills is low, the potential for a significant, long-term effect on marine life is moderate to high. The following BMPs will be implemented to minimize the potential for accidental spills/leaks to occur and to for the fluids to enter the bay :

- Oils and fuels will be housed in secondary containment structures.
- Spill clean up kits will be available at various locations on site. Personnel will be trained on the locations of the kits and their proper use and disposal.
- Personnel will be trained on the potential hazards from accidental spills and leaks to increase awareness of the materials being handled and the potential impacts.
- Routine maintenance and inspections of equipment containing oil, fuel, or other hazardous fluids will be performed to identify worn or faulty parts and needed repairs.
- During dredging operations, personnel will perform visual monitoring for spills or leaks. If a spill/leak is observed, the equipment will be immediately shut down, the source of the spill/leak will be identified, and the spill/leak will be contained.
- If a barge is utilized, an oil boom will be deployed in the vicinity of the barge to facility the containment of a spill/leak; however, the boom will be considered a last line of defense against spills/leaks.

6.2.2. Silt Curtain

It is assumed that the impacts to water quality from dredging can be mitigated to less than significant levels using the SOPs and mitigation measures described above; however, there is the potential that permitting may require the use of a silt curtain. If required, a single or double floating silt curtain will be installed around the dredging area from the water surface down to near the bay bottom to assist in containing suspended sediments and minimizing the potential for migration outside of the dredging area.

The curtain will be made of a continuous length of geotextile fabric that will enclose the dredging area and the barge. The curtain will be supported by a floating boom in open water areas and will be connected to landside structures at the shoreline. The bottom of the silt curtain will be weighted at the base of the fabric, which will minimize the movement of the curtain in response to currents. The silt curtain will not be extended to the bay bottom because a lower tides the curtain may fold up on the bay floor and cause sediments to be resuspended when the curtain is lifted by a higher tide or currents. The silt curtain will be continuously monitored for damage, dislocation, or gaps during dredging activities and will be routinely inspected for wear and tear. Any locations where the curtain is damaged, no longer continuous, or has been loosened from the supports will be quick

6.2.3. Water Quality Monitoring

Water quality monitoring will be performed during in-water activities (e.g., demolition, dredging, rock placement, filling) to obtain real-time data so that potential impacts to water quality can be quickly detected and activities modified to avoid impairing or degrading water quality. A water quality monitoring plan will be prepared prior to implementation of the alternative, which will include the evaluation of turbidity levels and dissolved oxygen. Monitoring will be performed in at least four locations outside of the active work areas. The monitoring stations will be located immediately outside the work area, approximately 250 and 500 feet down current from the work area, and at a location evaluated to represent ambient bay water conditions. The station immediately next to the work area will be visually monitored. If a turbidity plume is observed at the station adjacent to the work area, then monitoring of the 250-foot, 500-foot, and ambient water stations will begin. Samples collected at the 250-foot station are intended to be a screening tool to warn of potential impacts that may reach the 500-foot station. If the water quality samples at the 250-foot station indicate levels exceed the levels measured at the ambient station, then additional BMPs will be implemented. If water quality samples at the 500-foot station indicate levels exceed the levels at the ambient station, then the in-water activities will stop while alternative BMPs are evaluated.

6.3. Unloading Operations

After the material has been loaded onto the barge, the barges would transport the dredged material to the landside area near the sediment containment barrier. Barges would be unloaded using a crane-based clamshell bucket either directly into the sediment containment area or be transferred to a sediment containment area using trucks. During barge unloading operations, potential impacts to water quality may be occur as a result of overfilling of the crane bucket and movement of the crane bucket between the barge and the truck or containment area.

Overfilling of the unloading bucket can result in spillage of sediments into the water column while the bucket is swinging between the barge and the truck/containment area. Spillage of the sediment into the bay water can result in a short-term increase in suspended sediments, decreased dissolved oxygen, increased turbidity, changes in pH, and increase the potential for COCs in the sediments to reenter the water column, which will degrade or impair water quality.

The WQTR prepared by Geosyntec for the Shipyard Sediment Site EIR provides a detailed description of the impacts and potential mitigation measures to be implemented during unloading operations (Geosyntec, 2011). A brief summary is provided below:

- A spill plate should be placed between the barge and the landside to prevent spillage from falling into the bay water.
- The operator should ensure the unloading bucket is fully closed before moving from the barge to the truck/containment area.
- The operator should ensure the unloading bucket is fully empty before moving form the truck/containment area to the barge.

Therefore, the potential significant impacts associated with unloading operations are considered less than significant with the implementation of the mitigation measures described above.

6.4. Dewatering Operations

Sediments will require dewatering if they are to be shipped off site for disposal. Water quality in the bay may potentially be impacted during dewatering operations if the sediment containment area or containers holding decanted water from sediments are breached and the water flows back into the bay, which may result in increased turbidity, changes in pH, low dissolved oxygen, and increased suspension of contaminated sediments.

6.4.1. Breach in Containment Area

To mitigate a potential breach in the containment area, the containment area will be adequately designed and constructed to hold the volume and weight of dredged sediments. The containment will be constructed with berms around the perimeter to minimize the potential for decanted water/storm water from entering the bay should a breach occur. In addition, a salvaging layer of sand will be placed on the bottom of the containment are to act as a visual indicator to the excavator operator of the proximity to the containment liner or closely spaced k-rails/dry dock blocks will be placed at key points (e.g., corners) to minimize the potential that the excavator will come in contact with the containment liner. These methods will mitigate the potential significant impacts associated with a breach in the containment area to less than significant levels.

6.4.2. Discharge of Waste Water

To mitigate the potential discharge of wastewater (i.e., decanted water from sediments) from either the containment area or other containers holding wastewater is to properly design and construct the units to hold an adequate volume of water. The containment area should be capable of holding volume from a 50-year storm event and be surrounded by berms to prevent potential runoff of wastewater into the bay. An alternative mitigation measure is to pump wastewater into aboveground storage tanks with adequate design capacity.

Wastewater will be sampled, analyzed, and either disposed of off site at a facility permitted to receive wastewater or treated and discharged into the sanitary sewer in accordance with the City of San Diego discharge permit. In addition, a SWPPP will be prepared in accordance with the NPDES permit, which will outline means and methods for storm water control and containment and appropriate BMPs. These methods will mitigate the potential significant impacts associated with a breach in the containment area to less than significant levels.

6.5. Containment Barrier Construction and Filling Operations

Construction of the containment barrier (after dredging) and placement of dredged fill within the CDF may result in potentially significant impacts through improper placement methods. Improper placement methods could result in an increase in suspended sediments, decreased dissolved oxygen, increased turbidity, changes in pH, and increase the potential for COCs in the sediments to reenter the water column, which will degrade or impair water quality.

6.5.1. Containment Barrier Construction

The containment barrier will comprise three layers placed upon the surface of the bay bottom. The core of the containment jetty would consist of quarry-run aggregate or similar material. An underlayer consisting of small rock would support an armor layer that will protect the outside of the barrier from wave action, boat wakes and other erosional forces. A filter (e.g., geotextile filter fabric or graded rock) would be constructed inside the face of the containment barrier to mitigate migration of fill particles into the bay due to tidal fluctuations. It is expected that the rock and aggregate material composing of the containment jetty would be imported by trucks from a nearby quarry.

Rock may be transported by barge or by land using a crane from land or at the crest of the structure. Placement of material transported by barge might include bottom dumping of core rock where water depths allow or by operation of a crane mounted on a barge for armor rock. Alternatively, rock materials may be end-dumped or pushed from the western shoreline to progressively build the rock jetty eastward without the use of a barge or crane for placement.

An increase in suspended sediments, decrease in dissolved oxygen, increase in turbidity, changes in pH, and an increase in the potential for COCs in the sediments to reenter the water column may occur during rock placement. However, these impacts would be short-term and localized to the immediate vicinity of the rock placement. Monitoring of water quality parameters will take place during rock placement activities, as described in Section 7.2.3., to minimize to potential impacts outside of the CDF area. If monitoring indicates that the rock placement activities are resulting in an unacceptable level of impacts, the rock placement activities will stop or be modified until monitoring indicates the water quality parameters have returned to acceptable levels. A reduction in the turbidity generated during rock placement will subsequently reduce the water quality impacts associated with COCs bound to the sediments.

If bottom-dumping barges are being utilized, then the placement method may be altered to placement using a crane-mounted bucket. If a crane-mounted bucket is being utilized, the drop height and velocity of the bucket can be reduced. In addition, permitting from the USACE may require the use of a silt curtain to contain suspended solids during containment barrier construction. These methods will mitigate the potential significant impacts associated with the construction of the containment jetty to less than significant levels.

6.5.2. Filling Operations

The sediment will be placed by hydraulic methods, which means that the dredge fill material would be transferred from barges into the CDF through the use of pumps, pipelines, and hoses. The impacted sediments are most likely to travel out of the CDF area when they are suspended in the water column (i.e., observed as increased turbidity). To mitigate the migration of suspended sediments outside of the CDF, the following methods will be implemented:

- The containment barrier will be constructed prior to the placement of the fill material, which will include a filter inside the face of the containment barrier. Fill material will be placed behind the containment barrier. The filter will mitigate migration of fill particles into the bay due to permeation through the containment barrier as a result of water placement during filling activities or tidal fluctuations.

- Water outside of the CDF will be monitored as described in Section 7.2.3. If an exceedance occurs, then hydraulic placement of the fill would be slowed to allow sediments to settle out of suspension. If this modification is not sufficient to control the turbidity, then a floating silt curtain will be installed around the discharge area to contain the turbidity plum and prevent migration out of the CDF area.

- In addition, a weir may be constructed on or near the containment jetty to provide a method to release site water displaced during the placement of fill at the site. The weir may consist of a low crest in the containment jetty or a pipe in the structural fill of the barrier. The weir outflow will be monitored as described in Section 7.2.3. If an exceedance occurs, a filter fabric barrier of floating silt curtain will be installed across or just outside of the weir outflow to minimize the potential for suspended sediments to enter the water outside of the CDF.

These methods will mitigate the potential significant impacts associated with the filling operations to less than significant levels.

6.6. Post-Construction Release of Sediments

There is the potential that sediments from within the CDF may migrate into the bay through tidal fluctuations. However, the potential for this migration is low and the filter within the containment barrier will mitigate migration of fill particles into the bay to less than significant levels. The solubility of COCs in the sediments within the CDF (e.g., PCBs, metals) is inherently low due to their chemical characteristics. This solubility likely has been further reduced by having been exposed to the environment for decades. Therefore, besides monitoring the integrity of the CDF after a significant seismic or related event, post-construction monitoring does not appear to be warranted.

6.7. Drainage and Flooding

The filling operations will result in the conversion of approximatley 10 acres of intertidal and submerged lagoon areas into upland areas, which will alter the drainage patterns of the site. However, the upland surface will be paved with asphalt concrete post-construction; therefore, the potential for increased erosion or siltation is less than significant.

The addition of land area that will be paved will potentially alter the amount of surface runoff generated at the site. However, the project will not likely increase the potential for flooding on- or off-site because the area will be designed to properly drain (e.g., drainage slopes, swales, SWCS, etc.). In addition, the site will likely be subject to the Industrial Stormwater General Permit, which will require a SWPPP be prepared for the site that will identify potential sources of pollutants and the means to manage or reduce the storm water pollution from these sources (e.g., BMPs). Based on this information, the potential impacts related to changes in the drainage patterns at the site are less than significant.

The site is currently located within a 100-year floodplain; however, the landside areas adjacent to the site are not located within the floodplain. Since the surface elevation of the site after construction will be similar to the elevation of the surrounding properties, it is anticipated that the area will not be located within the 100-year floodplain after construction is complete. In addition, the project does not propose to construct homes or other structures on the site; therefore, there will not be impacts related to flooding.

6.8. Summary of Impacts

The potential significant impacts identified as associated with the proposed project include impacts to water quality from suspended sediments, which may result in low dissolved oxygen, changes in pH, increased turbidity, and toxicity. A copy of the CEQA Initial Study Checklist for Hydrology and Water Quality is provided in Appendix A.

The final mitigation measure utilized may be modified based on the final project design details; however, the potential mitigation measures described above are capable of mitigating the potential impacts to less than significant levels.

7. LIMITATIONS

The environmental services described in this report have been conducted in general accordance with current regulatory guidelines and the standard-of-care exercised by environmental consultants performing similar work in the project area. No warranty, expressed or implied, is made regarding the professional opinions presented in this report. Please note that this study did not include an evaluation of geotechnical conditions or potential geologic hazards.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Ninyo & Moore should be contacted if the reader requires any additional information or has questions regarding the content, interpretations presented, or completeness of this document.

Our conclusions, recommendations, and opinions are based on an analysis of the observed site conditions and the referenced literature. It should be understood that the conditions of a site could change with time as a result of natural processes or the activities of man at the subject site or nearby sites. In addition, changes to the applicable laws, regulations, codes, and standards of practice may occur due to government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which Ninyo & Moore has no control.

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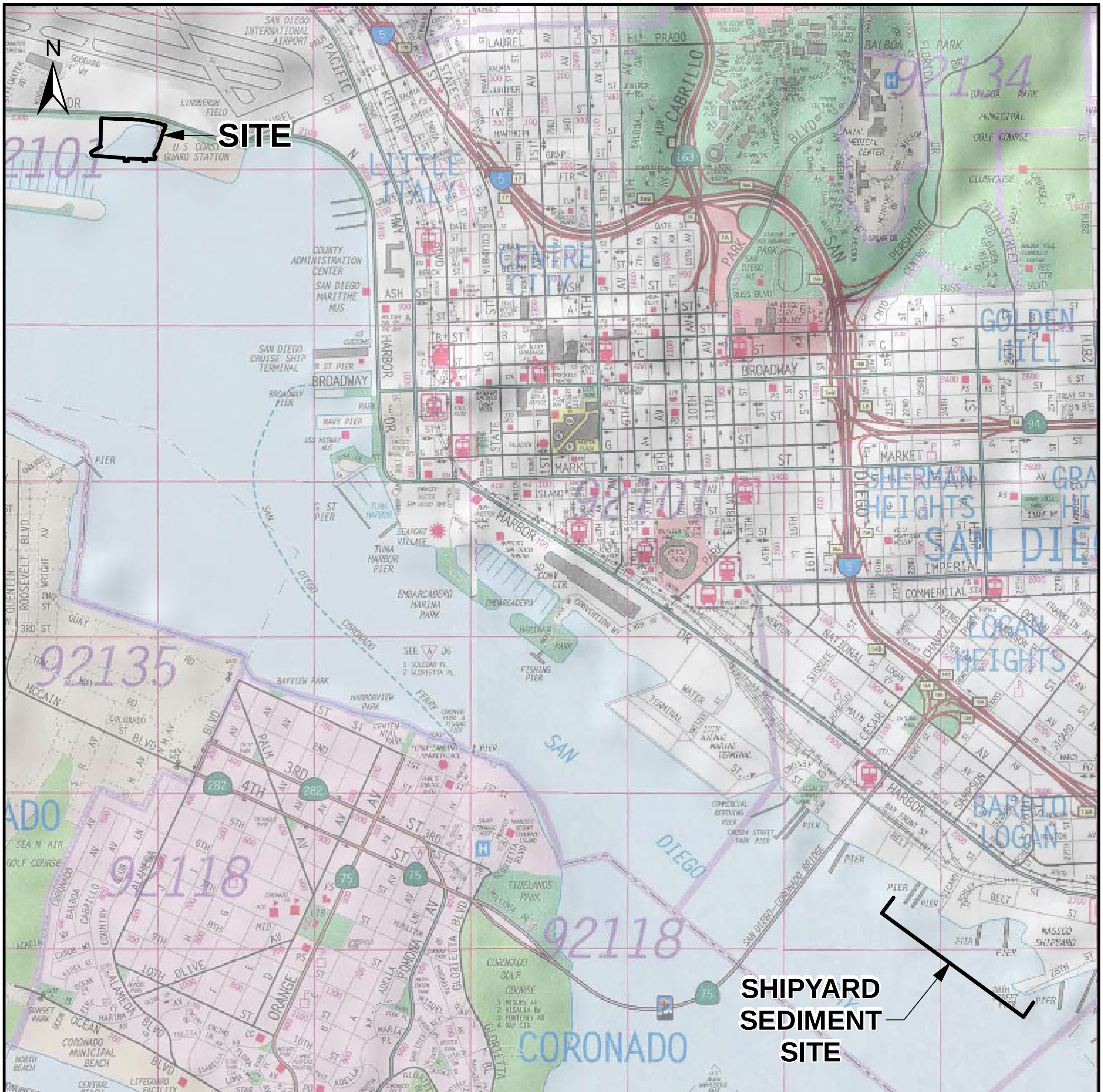
United States Geological Survey/Boemre, 2011, Pacific Coast Fisheries GIS Resource Database: http://www.boemre.gov/omm/pacific/enviro/Enviro-Studies/2010-Fisheries/spatial_data/additional _data.html: accessed on May 17.



SOURCE: 2008 Thomas Guide for San Diego County, Street Guide and Directory; Map © Rand McNally, R.L.07-S-129

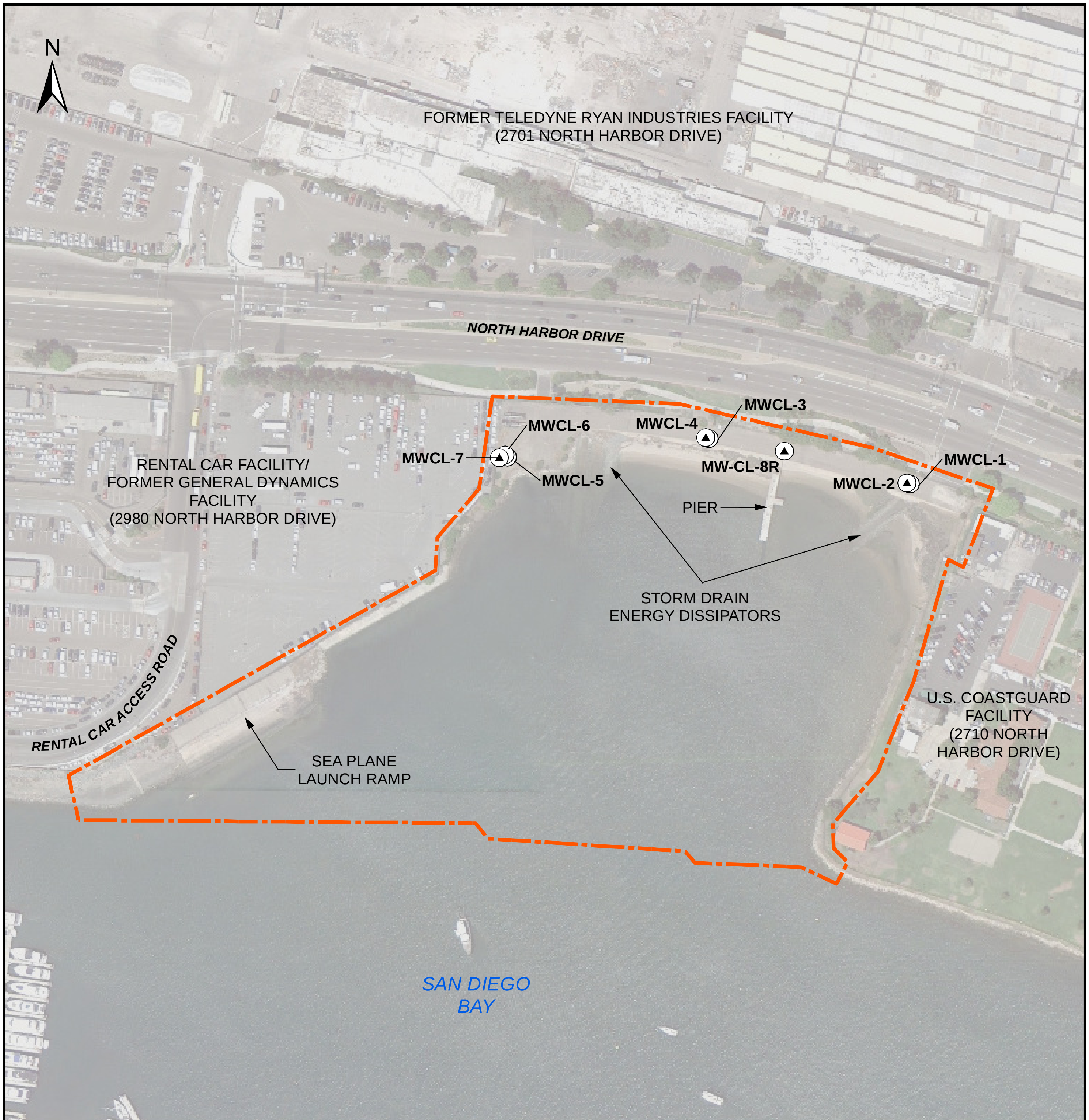
NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE

SCALE IN FEET

0 1,200 2,400 4,800

Ninyo & Moore		SITE LOCATION	FIGURE
PROJECT NO.	DATE	SHIPYARD SEDIMENT ALTERNATIVE CONVAIR LAGOON SAN DIEGO, CALIFORNIA	1
106997003	5/11		

S:\ArcGIS\Projects\100000_SD\106000-106999\106997\003\106997003_sl.mxd 5/31/2011 3:33:46 PM JDL



SOURCE: Aerial Imagery - Photo Date: August, 2010; (c) Google Earth, 2011

LEGEND

SITE BOUNDARY

SCALE IN FEET

0 100 200 400

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

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Ninyo & Moore

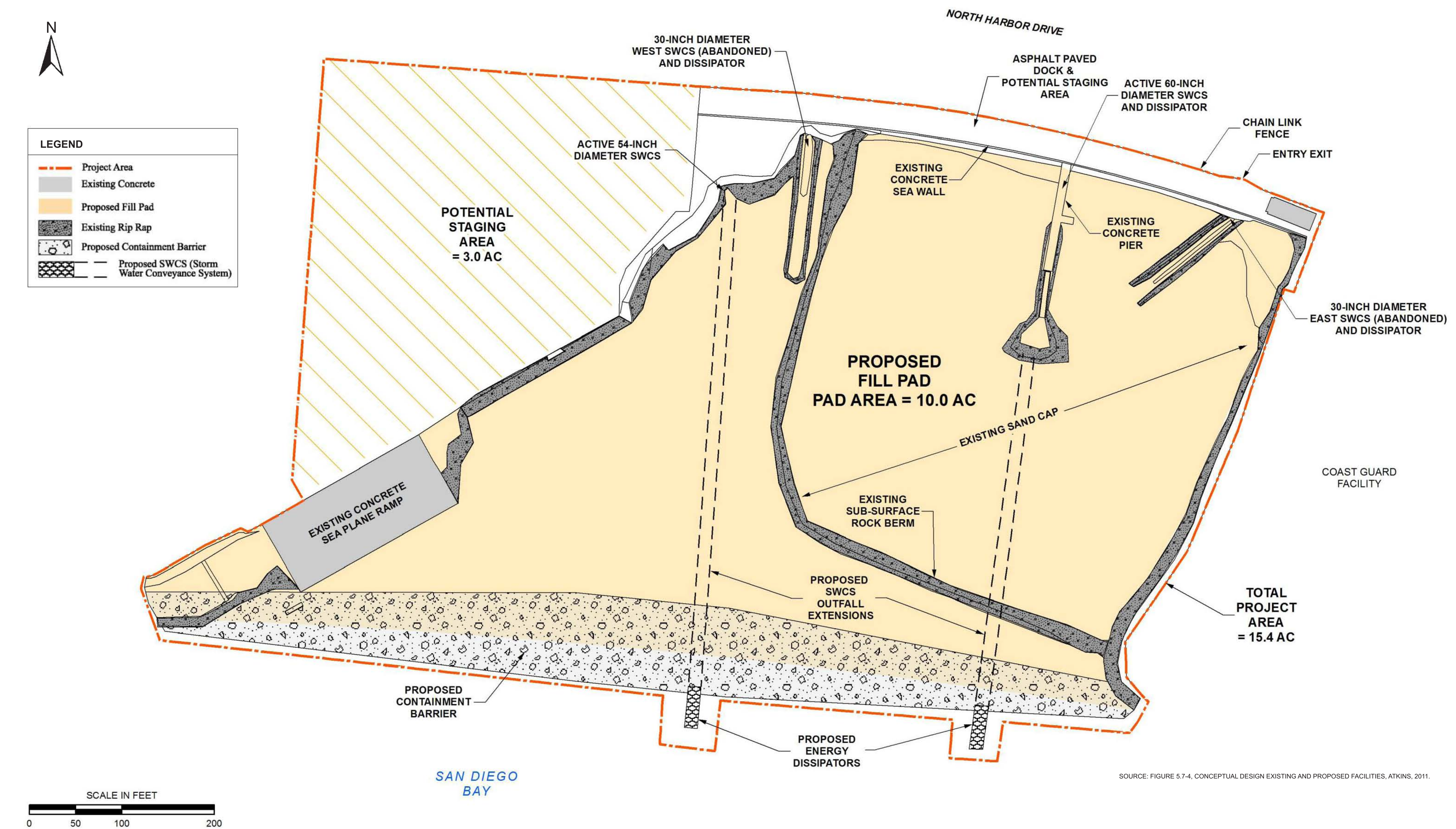
PROJECT NO.	DATE
106997003	5/11

SITE AND VICINITY

SHIPYARD SEDIMENT ALTERNATIVE
CONVAIR LAGOON
SAN DIEGO, CALIFORNIA

FIGURE

2



SOURCE: FIGURE 5.7-4, CONCEPTUAL DESIGN EXISTING AND PROPOSED FACILITIES, ATKINS, 2011.

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

106997002_dev_plan_atkins.cdr JDL

Ninyo & Moore		CONCEPTUAL DESIGN EXISITNG AND PROPOSED FACILITIES	FIGURE
PROJECT NO.	DATE	SHIPYARD SEDIMENT ALTERNATIVE CONVAIR LAGOON SAN DIEGO, CALIFORNIA	3
106997003	5/11		

APPENDIX A

CEQA INITIAL STUDY CHECKLIST, SECTION IX

CEQA INITIAL STUDY CHECK LIST

IX. HYDROLOGY AND WATER QUALITY - Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Violate any water quality standards or waste discharge requirements?		X		
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of a course of stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?			X	
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of a course of stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or off-site?			X	
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of pollutant runoff?			X	
f) Otherwise substantially degrade water quality?		X		
g) Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				X
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of failure of a levee or dam?				X
j) Inundation by seiche, tsunami, or mudflow?			X	

DRAFT

ENVIRONMENTAL IMPACT REPORT

SHIPYARD SEDIMENT REMEDIATION PROJECT

SAN DIEGO BAY, CALIFORNIA

State Clearinghouse No. 2009111098

VOLUME III
RESPONSE TO COMMENTS

PREPARED FOR:

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD
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LSA

September 15, 2011

TABLE OF CONTENTS

1.0 INTRODUCTION

The purpose of this document is to respond to all comments received by the California Regional Water Quality Control Board, San Diego Region (hereinafter referred to as the San Diego Water Board) regarding the environmental information and analyses contained in the Draft Programmatic Environmental Impact Report (Draft PEIR) for the Shipyard Sediment Site Remediation Project (proposed project).

As required by the California Environmental Quality Act (CEQA) Guidelines section 15087, a Notice of Completion (NOC) of the Draft PEIR for the Shipyard Sediment Site Remediation Project was filed with the State Clearinghouse (SCH) on June 16, 2011. In addition, the Notice of Availability was emailed to approximately 85 individuals representing public agencies, responsible parties, and interested parties.

The Draft PEIR was circulated for public review for a period of 45 days, from June 16 to August 1 2011. Copies of the Draft PEIR were distributed to all Responsible Agencies and to the SCH in addition to various public agencies and interested organizations. Copies of the Draft PEIR were also made available for public review at Logan Heights Public Library, at the San Diego Water Board office, and on the internet at the San Diego Water Board website www.waterboards.ca.gov/sandiego. Comments were accepted for a period of 45 days as required by CEQA.

Nine comment letters were received during the public review period. Comments were received from state and local agencies, and from organizations. No letters were received from members of the public. Comments that address environmental issues are thoroughly addressed. In some cases, minor corrections to the Draft PEIR are required, or additional information is provided for clarification purposes. Comments that (1) do not address the adequacy or completeness of the Draft PEIR; (2) do not raise environmental issues; or (3) request the incorporation of additional information not relevant to environmental issues do not require a response, pursuant to section 15088(a) of the CEQA Guidelines.

Section 15088 of the CEQA Guidelines, Evaluation of and Response to Comments, states:

> a. The Lead Agency shall evaluate comments on environmental issues received from persons who reviewed the draft EIR and shall prepare a written response. The Lead Agency shall respond to comments received during the noticed comment period and any extensions and may respond to late comments.

b. The Lead Agency shall provide a written proposed response to a public agency on comments made by that public agency at least 10 days prior to certifying an environmental impact report.

c. The written response shall describe the disposition of significant environmental issues raised (e.g., revisions to the proposed project to mitigate anticipated impacts or objections). In particular, major environmental issues raised when the Lead Agency's position is at variance with recommendations and objections raised in the comments must be addressed in detail, giving the reasons that specific comments and suggestions were not accepted. There must be good faith, reasoned analysis in response. Conclusory statements unsupported by factual information will not suffice.

d. The response to comments may take the form of a revision to the draft EIR or may be a separate section in the final EIR. Where the response to comments makes important changes in the information contained in the text of the draft EIR, the Lead Agency should either:

    1. Revise the text in the body of the EIR; or

    2. Include marginal notes showing that the information is revised in the responses to comments.

Information provided in this Response to Comments (RTC) document clarifies, amplifies, or makes minor modifications to the Draft PEIR. No significant changes have been made to the information contained in the Draft PEIR as a result of the responses to comments, and no significant new information has been added that would require recirculation of the document. An Errata document has been prepared to make minor corrections and clarifications to the Draft PEIR as a result of comments received during the public review period (see Appendix A). Therefore, this RTC document, along with the Errata document, is being prepared as a separate section of the EIR and is included as part of the Final Programmatic Environmental Impact Report (Final PEIR) for consideration by the San Diego Water Board prior to a vote to certify the Final PEIR.

INDEX OF COMMENTS

The following is an index list of the agencies, interested parties, and members of the public that commented on the Draft PEIR prior to the close of the public comment period or immediately thereafter. The comments received have been organized in a manner that facilitates finding a particular comment or set of comments. Each comment letter received is indexed with a number below. Please see Appendix C of this document for copies of these letters.

Letter	Name	Date
AGENCY COMMENTS		
A-1	California Department of Transportation	August 1, 2011
A-2	Unified Port of San Diego	[Undated]
A-3	Native American Heritage Commission	July 1, 2011
A-4	Department of Toxic Substance Control	July 28, 2011
A-5	California State Lands Commission	August 1, 2011
ORGANIZATION COMMENTS		
O-1	San Diego Gas & Electric	August 1, 2011
O-2	San Diego CoastKeeper/Environmental Health Coalition	July 27, 2011
O-3	NASSCO	August 1, 2011
O-4	General Dynamics	August 1, 2011

FORMAT OF RESPONSES TO COMMENTS

Copies of the comment letters are provided in Appendix C of this document**.** The number of each comment letter is in the upper-right corner and individual comments within each letter are numbered along the right-hand margin of each letter. The San Diego Water Board's responses to each comment letter are included in Chapter 2 of this document and are referenced by the index numbers in the margins. As noted in some of the responses, an Errata document has been prepared to provide corrections and clarifications to the Draft PEIR (see Appendix A of the document).

PROJECT REFINEMENTS

In response to comments received on the Draft PEIR prepared for the proposed project, the following project refinements have been hereby incorporated into the proposed project:

- Sand import and rock quarry import updated from approximately 10 truck trips per day to approximately 25 to 30 import trips per day.
- The San Diego Water Board will ensure that the responsible parties identified in the TCAO notify and consult California State Lands Commission (CSLC) staff in the event that any cultural resources are uncovered.
    - A protocol will be put into place to address accidental discovery of any archeological resources and/or human remains in the project footprint. If, during the course of project construction, unanticipated cultural resources are discovered, work should be halted temporarily until a qualified archaeologist can evaluate the significance of the

resources. If human remains are encountered during work on this project, State Health and Safety Code section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resource Code section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). The MLD may inspect the site of the discovery with the permission of the landowner, or his or her authorized representative. The MLD shall complete his/her inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and analysis of human remains and items associated with Native American burials.

- The San Diego Water Board will ensure that the responsible parties identified in the TCAO contract specifications will include the requirement that there be no off-site truck parking.

The refinements identified above clarify or amplify project features included in the Draft PEIR, and do not result in a substantive change to project impacts or change the significance conclusions of the Draft PEIR.

Revisions to Tentative CAO No. R9-2011-0001 (TCAO) were provided on September 15, 2011, consistent with the Third Amended Order of Proceedings. There are no changes to the project description in the EIR as a result of the revisions to the TCAO.

2.0 RESPONSE TO COMMENTS

CALIFORNIA DEPARTMENT OF TRANSPORTATION

Letter Code: A-1

Date: August 1, 2011

A-1-1

The comment is introductory to other comments in the letter. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

A-1-2

The comment states: “Mitigation Measure 4.1.1, states “Haul, delivery, and employee traffic shall be discouraged at I-5 southbound ramp/Boston Avenue intersection and on the roadway segment of Boston Avenue between 28th Street and the I-5 southbound (SB) ramp.” Please clarify how this mitigation measure will be enforced.”

The full text of the mitigation measure is:

Mitigation Measure 4.1.1: Should one or more of Staging Areas 1 through 4 be selected, the contractor shall require, and the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall verify, that the project-related truck traffic is routed on Harbor Drive (southbound) to the Civic Center Drive access to Interstate 5 (I-5) for the duration of the dredge-and-haul <u>and sand import</u> activity. <u>This requirement will be reflected in the contract documents for the primary contractor and sub-contractors.</u> Haul, delivery, and employee traffic shall be discouraged at the I-5 southbound ramp/Boston Avenue intersection and on the roadway segment of Boston Avenue between 28th Street and the I-5 southbound ramp.

As defined in the measures, the San Diego Water Board is responsible for ensuring that the responsible parties identified in the TCAO verify that the contractor requires all of its subcontractors to route southbound truck traffic on Harbor Drive. The contract documents for all portions of the project that contribute to haul, delivery, and sand import traffic will include a traffic control plan routing southbound traffic to the Civic Center Drive interchange to avoid increasing the number of trips on Boston Avenue between 28th Street and the I-5 southbound ramp. Clarifying text has been added in underscore to the measure.

It is also noted that Mitigation Measure 4.3.8 requires that a Traffic Control Plan be implemented that includes but is not limited to planned haul truck routes and haul truck escorts, if required.

A-1-3

The comment states: "On the TIA, Figure 2A & 2B, there are some discrepancies in the Existing Peak Hour Traffic Volume when comparing to Caltrans' 2009 volume within the intersections for on/off-ramps along I-5 as follow:

- Intersection #7, SB-off, AM Peak Volume should be 611 instead of 508.
- Intersection #9, NB-off, cumulative AM/PM Peak Volume should be 714/491 instead of 383/436.
- Intersection #9, NB-on, cumulative AM/PM Peak Volume should be 629/3 10 instead of 19/44. NB-on from 28th Street should also be included.
- Intersection #10, SB-on, cumulative AM/PM Peak Volume should be 675/973 instead of 321/636.
- Intersection #12, SB-on, cumulative AM Peak Volume should be 472 instead of 260."

See Response to Comment A-1-4, below.

A-1-4

The comment states: "Based on the new Peak Volumes above, all Delays and Level of Service (LOS) Tables and Figures need to be re-calculated for these intersections."

As stated on page 4.1-9 of the Draft PEIR, the existing Peak Hour Traffic Volumes at study area intersections were collected by National Data and Surveying Services (NDS) in March 2011. This information was collected consistent with the provisions of CEQA, which require that existing conditions be used as the environmental baseline against which the project's changes to the environment are measured (CEQA Guidelines 15125). The 2011 information was determined to represent current conditions for Level of Service operations more accurately than the 2009 data suggested by Caltrans. Revisions to the Delays and Level of Service (LOS) Tables are not needed.

It should be noted that the data presented in the Traffic Study and EIR Section is existing data and not cumulative data as suggested in the comment. In addition, the data and corresponding intersection operations reported at Intersection #9 do not include volume entering the slip ramp south of National Avenue on 28th Street.

A-1-5

The comment states: "It appears that Staging Areas 1-4 will access 1-5 via intersection # 7, 9 & 10. Currently, intersections #7 & #9 operate at LOS F, and intersection #10 will degrade to LOS F with this project. Although the TIS called out to signalize intersection #10 as the proposed mitigation, additional measures could be made to minimize the impact to the local community by routing all trucks to SB Harbor Drive then use Civic Center Drive interchange."

Intersection #7 does not have traffic control and LOS was not reported in the Draft PEIR and traffic study. Intersection #9 operates at LOS B with the proposed project as reported in the Draft PEIR and traffic study. These two issues are not consistent with the comment that suggests they operate at LOS F. The mitigation provided by rerouting all traffic to the Civic Center Drive interchange was described in Attachment H of the Traffic Impact Analysis. The traffic control plan for the project will route all southbound traffic to the Civic Center Drive interchange as requested.

A-1-6

The comment states: "All state-owned signalized intersection affected by this project shall be analyzed using the Intersecting Lane Vehicle (ILV) procedure per Highway Design Manual (HDM), Topic 406, Page 400-430."

An ILV analysis (for existing and existing plus project [Staging Areas 1-5] conditions) for the following signalized freeway ramp intersections was conducted to satisfy this comment:

- Interstate 5 (I-5) Northbound Off-Ramp/National Avenue;
- I-5 Northbound Ramps/24th Street; and
- I-5 Southbound Ramps/24th Street.

A summary table is attached to these responses and is included in Appendix B of this RTC document. As shown in the ILV table, all study area signalized freeway ramp intersections would operate below the 1,500 ILV per hour threshold with implementation of the project.

A-1-7

The comment concludes the comment letter. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

UNIFIED PORT OF SAN DIEGO

Letter Code: A-2

Date: Submitted August 1, 2011

A-2-1

The comment is introductory to other comments in the letter. The comment does not contain any substantive statements or questions about the DEIR or the analysis therein. Therefore, no further response is necessary.

A-2-2

The comment states: "EIR: 'The removal of the marine sediments will require upland areas for dewatering, solidification, and stockpiling of the materials and potential treatment of decanted waters prior to off-site disposal. Therefore, in addition to the open waters of the Shipyard Sediment Site, five upland areas have been identified by the San Diego Water Board as potential sediment staging areas.'

"Comment: These five potential sediment staging areas appear to be disconnected parcels that are under the control of various District tenants or other entities. The availability and suitability of these parcels should be analyzed in greater detail. The Draft EIR should include a survey of the parcels accessibility, pavement durability and the water containment collection and removal systems that would be needed to ensure no releases occur from dewatering activities."

The Draft PEIR provides a reasonable range of project alternatives and potential staging areas and does not select a preferred alternative or staging area. Once a project has been selected, detailed analyses will be provided in a site-specific environmental document, including any staging area(s) to be used.

A-2-3

The comment states: "Comment: The Draft EIR should analyze less space intensive sediment dewatering systems, such as centrifuges and/or reagent dehydration of sediments, which could be used on barges and would allow for sediment to be directly off-loaded from barges to trucks for disposal."

The Draft PEIR included landside sediment staging areas due to the amount of sediment that was anticipated to be removed. The Draft PEIR provided a range of project alternatives and did not select a preferred alternative or staging area. Once a project has been selected, detailed analyses will be provided in a project-specific environmental document, including any alternative dewatering methods to be used. The comment expresses an opinion in support of using barges for dewatering and treatment of sediment in lieu of landside staging areas. This comment will be included as part of the record and made available to the decision-makers prior to a final decision on the project.

A-2-4

The comment states: "Comment: Staging Area 1 encompasses a significant portion of a 96-acre site that is occupied by Tenth Avenue Marine Terminal (TAMT). The Draft EIR has identified 36.14 acres in the south west section of the site as a 'usable area.' The report also identifies a 13.52 acre "usable area" site in the northeast portion of Staging Area 1 which is predominately occupied by Burlington Northern Santa Fe Railroad's (BNSF) major San Diego switching yard. The 36.14 acre 'usable area' is partially comprised of the 20.5 acre Dole Fresh Fruit Company leasehold that is used as a container yard for weekly importation of bananas and other fresh fruit from Central America. The remaining 15.64 acres consists of the following; a portion of the San Diego Refrigerated Storage leasehold that is used for employee parking, container inspections by US Customs and Border Protection and for staging palletized break-bulk fruit cargos; a portion of the Cemex Pacific Coast Cement Corporation leasehold that is used for the importation of bulk cement; the wharf apron docks at Berth's 10-1 through 10-6 where a variety of cargos are handled when loading or unloading cargo vessels; and the remainder consisting of paved open areas that contain storage areas for cargo, space for cargo handling equipment, truck staging lanes, rail tracks and roadways."

Section 3.6.2 of the Draft PEIR states: "The proposed project requires a landside sediment management site with sufficient space and access to stockpile, dewater, and transport the removed dredge material. Although the exact area required for sediment management will be determined during the final design phase, it is estimated that 2 to 2.5 acres would be required." The San Diego Water Board Cleanup Team acknowledges the need to minimize the effect of staging activity on active Port uses such as shipyards and marine terminals. Only a small portion of the TAMT would be required, should Staging Area 1 be selected.

The Draft PEIR provides a range of potential staging areas and does not select a staging area. Any ongoing uses within Staging Area 1 that preclude portions of the site from being used for dewatering and treatment would be addressed once a project alternative and staging area have been selected. Future decisions and implementing actions following certification of the PEIR and approval of the project will be subject to subsequent environmental review pursuant to CEQA. Detailed analyses regarding the staging area will be provided in a site-specific environmental document to be prepared once the preferred project is identified.

A-2-5

The comment states: "Use of all or any portion of these areas for the treatment of dredged sediments would have the following impacts at TAMT: (1) an average of 100 vessels per year dock at TAMT. The cargos consist mainly of 40-foot-long refrigerated containers or project cargos such as large wind mill components or large electrical transformers. Dole uses its entire facility to stage over 500 containers each week prior to delivery to West Coast markets or before being loaded back on board a vessel. Typical wind mill blades range in length from 130 feet to 160 feet and the tower sections can be up to 80 feet in length. These types of cargos normally cannot be stacked and tens of thousands of square feet of open space are needed to both store and handle them properly."

Any ongoing uses within the TAMT (Staging Area 1) that preclude the site from being used for dewatering and treatment would be addressed once a project alternative and staging area have been selected. Please see response to comment A-2-4, above.

A-2-6

The comment states: "(2) The terminal's system of roadways and rail track need to be kept clear to effectively move cargo, material and equipment on and off the facility. Any prolonged closure of any portion of the terminal's transportation system would have a significant impact on the efficiency of the entire terminal."

Landside staging areas would avoid the closure of existing roadways and rail tracks; detailed analyses regarding the staging area will be provided in a site-specific environmental document to be prepared once the preferred staging area is identified. Please see response to comment A-2-4, above.

A-2-7

The comment states: "(3) Within the area deemed as "useable" there are three tenant leaseholds. These leases would have to be re-negotiated, if the tenants are willing, to allow for this activity to occur."

Any ongoing uses within the TAMT (Staging Area 1) that preclude the site from being used for dewatering and treatment would be addressed once a project alternative and staging area have been selected. Please see response to comment A-2-4, above.

A-2-8

The comment states: "(4) The Port of San Diego is designated as a "Strategic Port" by the Federal Maritime Administration to handle military cargos. Under the San Diego "Port Planning Order" the Port is required to provide "staging space of no less than 8 acres" at TAMT within 48 hours after receiving notification from the US Military's "Surface Deployment and Distribution Command" (SDDC). Any materials or equipment within the 8-acre footprint would need to be relocated on or off the terminal within the stipulated time frame. Since 2008, two to four military operations have taken place each year at TAMT."

Any ongoing uses within the TAMT (Staging Area 1), including provisions of the SDDC, that preclude the site from being used for dewatering and treatment would be addressed once a project alternative and staging area have been selected. Please see response to comment A-2-4, above.

A-2-9

The comment states: "(5) Any reduction in space at the Terminal will result in lost revenue due to a reduction in cargo volumes, increased costs due to ineffective handling of cargo and impact the ability of the Port to effectively market its maritime cargo handling facilities."

Any ongoing uses within the TAMT (Staging Area 1) that preclude the site from being used for dewatering and treatment would be addressed once a project alternative and staging area have been selected. Please see response to comment A-2-4, above.

A-2-10

The comment states: "(6) If any of the existing activities described above were required to be relocated to accommodate use of the TAMT as Staging Area 1, such relocation may result in significant environmental impacts at the relocation site, which would need to be evaluated in the Draft EIR. As a result of these constraints, the use of a significant portion of the TAMT as Staging Area 1 to conduct the dewatering operations is likely to be infeasible."

The Draft PEIR provides a range of potential staging areas and does not select a staging area. Any ongoing uses within the TAMT (Staging Area 1) that preclude portions of the site from being used for dewatering and treatment would be addressed once a project alternative and staging area have been selected. Detailed analyses regarding the staging area will be provided in a site-specific environmental document to be prepared once the preferred project is identified.

A-2-11

The comment states: "Comment: Staging Area 2 also contains portions of the 96-acre TAMT site as well as a portion of the BNSF switching yard. 'Useable Areas' within Staging Area 2 are further defined as: 0.57 acres within the Searles Valley leasehold (bulk cargo handler); 0.79 acres within the Stella Maris Seaman's Center leasehold as well as the approaches to the TAMT truck scale; 2.77 acres containing a truck staging lot that is used as an overflow lot by Dole and whenever military operations are taking place. This area also contains a one acre site which is slated for development to begin during the 2nd quarter of 2012 in which an office complex for the Maritime Operations Department and potentially an office and warehouse complex for the National Oceanic and Atmospheric Administration will be built. The remaining 2.59 acres contains both Port and BNSF property consisting of the lead rail tracks that serve TAMT as well as equipment storage areas for both entities."

Section 3.6.2 of the Draft PEIR states: "The proposed project requires a landside sediment management site with sufficient space and access to stockpile, dewater, and transport the removed dredge material. Although the exact area required for sediment management will be determined during the final design phase, it is estimated that 2 to 2.5 acres would be required." The San Diego Water Board Cleanup Team acknowledges the need to minimize the effect of staging activity on active Port uses such as shipyards and marine terminals. Only a small portion of the NCMT would be required, should Staging Area 5 be selected.

The Draft PEIR provides a range of potential staging areas and does not select a staging area. Any ongoing uses within Staging Area 2 that preclude portions of the site from being used for dewatering and treatment would be addressed once a project alternative and staging area have been selected. Detailed analyses regarding the staging area will be provided in a site-specific environmental document to be prepared once the preferred project is identified.

A-2-12

The comment states: “Use of these areas for onshore dewatering and treatment will have similar impacts as described above including leasehold issues, potential loss of the staging area if a ‘Port Planning Order’ is invoked, disruption of both cargo handling operations, disruption of transportation infrastructure and development plans resulting in loss of revenue. As a result of these constraints, the use of a significant portion of the TAMT as Staging Area 2 to conduct the dewatering operations is likely to be infeasible.”

Any ongoing uses within the Staging Area 2 that preclude the site from being used for dewatering and treatment would be addressed once a project alternative and staging area have been selected. Please see response to comment A-2-11, above.

A-2-13

The comment states: “Comment: Staging Area 5 shows a ‘Useable Area’ of 145.31 acres that consists of the 125 acre National City Marine Terminal (NCMT) with the remainder of the acreage split between BNSF property and the Dixieline Lumber leasehold on Port property. Pasha is the principal terminal operator at NCMT where it conducts operations consisting of the import, export, handling and storage of motor vehicles and a biweekly cargo service to and from Hawaii by Pasha’s Hawaii Transport Lines (PHTL). During each of the last three years Pasha has received an average of approximately 243,000 vehicles on 165 vessels. PHTL annually ships and receives in excess of 100,000 tons of cargo consisting of a variety of high and wide cargos (cement trucks, fire trucks, sewer pipe, Ferris wheels, yachts, containers, recreational trailers, crates etc.) on 30 vessels in the Hawaiian trade. Dixieline Lumber and Weyerhaeuser Lumber, another lumber company which is not within the ‘useable area,’ receive approximately 96 million board feet of lumber each year on 12 lumber barges. All of these cargos require large open paved areas for storage plus roadways and rail tracks for handling and transport. Each month up to 26,000 vehicles can be stored on the terminal.”

The Draft PEIR provides a reasonable range of potential staging areas and does not select a staging area. Any ongoing uses within Staging Area 5 that preclude portions of the site from being used for dewatering and treatment would be addressed once a project alternative and staging area have been selected. Detailed analyses regarding the staging area will be provided in a site-specific environmental document to be prepared once the preferred project is identified.

Please see response to comment A-2-11.

A-2-14

The comment states: "The "Port Planning Order" applies to NCMT as well. If notification is made by SDDC 15 acres of staging space must be made available within 48 hours. Again, the use of NCMT for onshore dewatering and treatment will have significant lease issues, disruption of revenue producing cargo operations, have a negative effect upon marketing of the terminal and could interfere with national security if a PPO is initiated. As a result of these constraints, the use of the NCMT as Staging Area 5 to conduct the dewatering operations is likely to be infeasible."

Any ongoing uses within the Staging Area 5 that preclude the site from being used for dewatering and treatment would be addressed once a project alternative and staging area have been selected. Please see responses to comments A-2-11 and A-2-13, above.

A-2-15

The comment states: "Comment: Figures 3-3 through 3-7, which identify the location of proposed staging areas, appear to be out of date. For example, the CP Kelko waterside leasehold does not reflect the recent demolition of waterside structures and the related increase in open space. This information should be updated in the Final EIR."

The comment is correct that there are some recent minor changes in the land use from that indicated by the 2008 aerial photographs used in the Draft PEIR versus that observed in more recent 2011 aerial photographs. Reviews of 2011 aerial photographs available at Google.com indicate that these recent changes are minor. There is no change to the analyses or conclusions regarding potential environmental effects as included in the Draft PEIR as a result of this comment. The Draft PEIR provides a reasonable range of potential staging areas and does not select a staging area. The actual total area available for staging as illustrated in the five potential staging areas indicated in Figures 3-3 through 3-7 will be determined by the responsible parties and specified in the Remedial Action Plan that is to be prepared and submitted to the San Diego Water Board. Detailed analyses regarding the staging area will be provided in a site-specific environmental document to be prepared once the preferred project is identified.

Please see response to comment A-2-11.

A-2-16

The comment states: "INCONSISTENCIES BETWEEN THE DRAFT EIR PROJECT DESCRIPTION AND THE PROJECT'S COST ANALYSIS ASSUMPTIONS

"The Revised Tentative Cleanup and Abatement Order and Draft Technical Report identifies a cost estimate for the Shipyard Sediment Remediation Project within Appendix 4, Section 32, Table A32-26. The District has identified some inconsistencies between the cost estimate project assumptions and the Shipyard Sediment Remediation Project Description provided in Chapter 3, Project Description, of the Draft EIR.

In general, the District has identified inconsistencies that pertain to (1) the Construction Schedule, (2) Demolition and Capping Activities, (3) Landfill Disposal, (4) Dredge Quantity, and (5) Quarry Run Rock. Table 1, provided at the end of this comment letter, identifies each cost assumption, inconsistency in the Draft EIR, and applicable environmental issue. Below is a summary of the inconsistencies that have been identified between the cost estimate project description/assumptions and the Draft EIR project description, and their potential repercussions on the analysis contained in the Draft EIR."

The comment is introductory to Comments A-2-17 through A-2-24 provided in the letter. Please see responses to comments A-2-17 through A-2-24, below.

A-2-17

The comment states: "1. Construction Schedule. In the cost estimate, the construction scenario for the proposed project is described as '3 Construction Seasons,' without further definition. In the Draft EIR, the construction scenario is described as follows: "There are two scheduling options for completion of the remedial action. The first scheduling option is expected to take 2 to 2.5 years to complete. Under this option, the dredging operations would occur for 7 months of the year and would cease from April through August during the endangered California least tern breeding season. The second option is to implement the remedial plan with continuous dredging operations, which would be expected to take approximately 12.5 months to complete. This scenario assumes that the dewatering, solidification, and stockpiling of the materials would occur simultaneously and continuously with the dredging. Also assumed under this compressed schedule option is that dredging operations could proceed year-round, including during the breeding season of the endangered California least tern (April through August).

"The construction scenarios described in the cost estimate and the Draft EIR are not consistent. The cost estimate identifies three construction seasons, while the Draft EIR identifies 12.5 months or 2.5 years to complete construction. Assuming one construction season equates to one year of construction, the cost estimate anticipates a longer duration of construction."

The remedial action implementation schedule in DTR Section 35 is more informative than the cost estimate in Table A32-26. The remedial action schedule assumes 3 dredging events that take place over approximately 2.5 years. Figure 35-1 (DTR Section 35) shows dredging event 1 beginning in September of year one. The drying and disposal part of dredging event 3 ends in the spring of year 4. Therefore, the total time for dredging, drying, and disposal activities anticipated in the remediation implementation schedule in the DTR is consistent with the Draft PEIR assumptions.

A-2-18

The comment states: "If this extended period of construction is accurate, the Air Quality analysis within the Draft EIR may need to be revised to evaluate the extended construction timeline. An extended construction timeline could reduce air quality emission impacts, if the amount and type of daily construction is reduced from what is currently accounted for within the Draft EIR."

Please see response to comment A-2-17, above. The construction period analyzed in the Draft PEIR is consistent with the schedule in the DTR. Analysis of an extended construction period is therefore not warranted.

A-2-19

The comment states: "2. Demolition and Capping Activities. The cost estimate identifies the demolition of an existing BAE pier, while the Draft EIR does not mention demolition of this pier. If demolition of the BAE pier is considered a component of the proposed project, the Project Description, and Air Quality and Transportation and Circulation analysis in the Draft EIR would need to be revised to reflect this demolition work. Demolition of the BAE pier would likely require off-site disposal, which would result in increased truck trips and associated air emissions. Additional construction equipment may also be required for this demolition, or equipment already identified in the Draft EIR may be used for longer periods of time, which would result in increased construction-related emissions. An increase in truck traffic and construction-related emissions from demolition of the BAE pier thus may result in greater impacts to Air Quality and Transportation and Circulation than accounted for in the Draft EIR."

BAE Systems Pier 5 is the "dormant pier" referred to in DTR Table A32-26. Pier 5 is a remnant pier stub, is obsolete, and will be demolished regardless of whether or not the sediment cleanup takes place. In fact, BAE Systems has filed an application for a Clean Water Act section 401 Water Quality Certification from the San Diego Water Board for a maintenance construction project that includes the demolition of Pier 5. Thus, the pier demolition is not part of the project for purposes of CEQA. Therefore, an increase in truck traffic and construction-related emissions from demolition of the BAE pier does not need to be addressed in the Draft PEIR. It should be noted that DTR Table A32-26 has been revised to remove the "dormant pier" demolition from the cost estimate.

A-2-20

The comment states: "The cost estimate also assumes that half of the total dredged area will receive 1–3 feet of clean sand for a cap. The Draft EIR assumes that only the pier and pilings will receive a clean sand cap. If half of the dredged area is to receive a sand cap, the Draft

EIR should to be revised to reflect the additional placement and importation of sand within the Project Description, Transportation and Circulation and Air Quality EIR sections. In the Transportation and Circulation analysis, the importation of additional sand would increase truck trips and associated air emissions above levels currently accounted for in the Draft EIR. Additional construction equipment may also be required for the placement of the sand cap, or equipment already identified may be used for longer periods of time, which also would increase construction-related emissions. An increase in truck traffic and construction equipment emissions would likely result in greater impacts to Air Quality and Transportation and Circulation than accounted for in the Draft EIR."

Whether or not any dredged area of the Shipyard Sediment Site will receive a clean sand cover will be based on conditions after dredging and is speculative at this time. Thus, sand cover of the dredge areas was not included in the Draft PEIR project description. The cost estimate in Table A32-26 was prepared for the purpose of making economic feasibility findings required by State Water Board Resolution No. 92-49, not for defining the project for CEQA purposes. Nonetheless, even if part of the site receives a clean sand cover after dredging, there would be no increase in the daily impacts from noise, traffic, and air pollutant emissions as these operations would occur after the dredging phase of the proposed project. Potentially, the number of construction days could increase, but this would not increase the impacts during the dredging phase, which had the greatest overall daily impacts. Therefore, daily traffic, air quality, and noise impacts would not be increased over the levels analyzed in the Draft PEIR, and no changes to the required mitigation are necessary. Future decisions and implementing actions following certification of the PEIR and approval of the project will be subject to subsequent environmental review pursuant to CEQA. Furthermore, these impacts are not permanent, and will cease upon completion of project construction activities.

A-2-21

The comment states: "3. Landfill Disposal. The cost estimate identifies the Copper Mountain landfill in Arizona as the disposal site for all sediment. The Draft EIR identifies the Kettleman Hills landfill, in Kings County, California, as the disposal site for sediment classified as a hazardous material (up to 15 percent of the sediment) and the Otay Landfill in San Diego, California, as the disposal site for non-hazardous sediment (85 percent of the sediment). If dredged sediment is to be disposed of at the Copper Mountain landfill in Arizona, the Project Description, and Air Quality and Transportation and Circulation analysis in the Draft EIR should be revised. In the Transportation and Circulation analysis, the disposal location in Arizona would increase truck trip vehicle miles traveled. An increase in vehicle miles traveled by the disposal trucks would result in an associated increase in air emissions. If sediment is to be disposed of at the Copper Mountain landfill, the proposed project would likely result in greater impacts to Transportation and Circulation and Air Quality than accounted for in the Draft EIR."

The cost-estimate in Table A32-26 was prepared for the purpose of making economic feasibility findings required by State Water Board Resolution No. 92-49, not for defining or developing a project description for CEQA purposes. Kettleman City and Otay Landfills are the most likely disposal sites for the dredged sediments and other wastes from the cleanup; therefore, Copper Mountain was not included in the Draft PEIR analysis. Future decisions and implementing actions following certification of the PEIR and approval of the project will be subject to subsequent environmental review pursuant to CEQA. No further analysis related to disposal at Copper Mountain is required at this time.

A-2-22

The comment states: "Additionally, the cost estimate assumes a total quantity of 171,500 cubic yards (cy) of sediment will be disposed after handling and dewatering activities. The Draft EIR identifies a total quantity of 164,910 cy to be disposed after handling and dewatering activities. If 171,500 cy of sediment must be disposed of off-site, the Draft EIR should be revised to reflect this additional quantity within the Project Description, Air Quality and Transportation and Circulation sections. An increase in off-site disposal would require additional truck trips, resulting in increased air emissions, and would potentially result in greater impacts to Transportation and Circulation and Air Quality than analyzed in the Draft EIR."

The cost estimate in the TCAO/DTR was prepared for the purpose of making economic feasibility findings required by State Water Board Resolution No. 92-49, not for defining the project for CEQA purposes. The traffic and air quality impacts of the proposed project are based on the Project Description included in Chapter 3.0 of the Draft PEIR.

A-2-23

The comment states: "4. Dredge Quantity. In addition to an initial 143,400 cy of dredging, the cost estimate identifies 28,100 cy of 'Additional Dredging.' Additional dredging is described 'as needed for a second pass.' The cost estimate states that this additional dredging will consist of two feet of dredging over one-half of the remedial area. Including initial and secondary dredging, the cost estimate identifies a total of 171,500 cy of sediment that will be dredged. However, the Draft EIR identifies a total of 143,400 cy of sediment that will be dredged. The Draft EIR does not identify additional dredging as part of the proposed project and does not account for the additional 28,100 cy of dredge identified in the cost estimate. If a total of 171,500 cy of sediment will be dredged (as identified in the cost estimate), rather than 143,400 cy of sediment (as identified in the Draft EIR), the Draft EIR should be revised to reflect this additional dredging in the Project Description, Transportation and Circulation, and Air Quality sections. In the Transportation and Circulation analysis, the removal of sediment during additional dredging activities would increase truck trips (and associated air emissions) and would likely result in greater Transportation and Circulation impacts than accounted for in the Draft EIR. Additional construction equipment may also be required for the additional dredging, or equipment already identified may be used for longer periods of time, which would increase construction-related emissions and cause impacts to Air Quality to be greater than accounted for in the Draft EIR."

Whether or not any dredged area of the Shipyard Sediment Site will need a second pass to reach required cleanup levels is speculative at this time. Thus, second pass dredge volumes were not included in the Draft PEIR project description. The cost-estimate in Table A32-26 was prepared for the purpose of making economic feasibility findings required by State Water Board Resolution No. 92-49, not for defining the project for CEQA purposes. Nonetheless, if any of the remedial footprint requires second pass dredging, there would be no increase in the daily impacts from noise, traffic, and air pollutant emissions as these operations would occur after the dredging phase of the proposed project. Potentially, the number of construction days could increase, but this would not increase the impacts during the dredging phase, which had the greatest overall daily impacts. Therefore, daily traffic, air quality, and noise impacts would not be increased over the levels analyzed in the Draft PEIR, and no changes to the required mitigation are necessary. Furthermore, these impacts are not permanent, and will cease when the project is completed.

A-2-24

The comment states: "5. Quarry Run Rock. The cost estimate identifies the placement of 21,887 tons of quarry run rock for the protection of marine structures. The Draft EIR does not account for the importation or placement of quarry run rock. If 21,877 tons of rock is required to be placed within the proposed project site, the Draft EIR should be revised to reflect this change in the Project Description, Air Quality, and Transportation and Circulation sections. The import of the quarry run rock would result in increased truck trips (and associated air emissions) and would result in potentially greater impacts to Transportation and Circulation than analyzed in the Draft EIR. Additional construction equipment may also be required for the placement of quarry run rock, or equipment already identified may be used for longer periods of time, which would further increase construction related emissions and cause impacts to Air Quality to be greater than accounted for in the Draft EIR."

The cost-estimate in Table A32-26 was prepared for the purpose of making economic feasibility findings required by State Water Board Resolution No. 92-49, not for defining the project for CEQA purposes. Nonetheless, the daily impacts from traffic and air pollutant emissions will not be greater as a result of the placement of quarry run rock to protect marine structures during the dredging project. The quarry run rock would be delivered and placed prior to dredging operations, which had the greatest overall daily impacts. Therefore, daily traffic, air quality, and noise impacts would not be increased over the levels analyzed in the Draft PEIR, and no changes to the required mitigation are necessary. Furthermore, these impacts are not permanent, and will cease when the project is completed.

A-2-25

The comment states: "SEDIMENT SAMPLING AND DISPOSAL

"The following comments are provided for sediment sampling and disposal information described in the Draft EIR. The comments are organized by chapter, section and page number.

"Chapter 3 Project Description

"A. Page 3-9, Section 3.6.2, Onshore Dewatering and Treatment.

"EIR: 'After drying, soil sampling will be conducted, and all dredged material will be loaded directly onto trucks for disposal at an approved upland landfill.'

"Comment: Please include a description of the contaminants that would be tested, the protocol that would be followed, the criteria upon which this protocol is based, and the thresholds that would be used to determine what material would require disposal at Kettleman Hills landfill rather than Otay landfill."

CEQA does not require that the protocol for the testing and criteria for proper disposal of dredge material be included in the Draft PEIR analysis. Landfill operators are required to ensure that dredge wastes disposed of in their landfills are properly categorized pursuant to Title 22 requirements and Title 27 requirements. Furthermore, landfill operators must ensure that wastes disposed of in their landfills are consistent with the landfill's waste discharge requirements. The potential environmental impacts associated with the disposal of wastes at Kettleman Hills and Otay Landfills were evaluated in the CEQA documents prepared and adopted by the Lead Agencies for these landfills and by the Central Valley and San Diego Water Boards, respectively, when they issued waste discharge requirements for the landfills.

A-2-26

The comment states: "B. Page 3-9, Section 3.6.3, Transportation and Disposal.

"EIR: 'For purposes of this project, it is assumed that 85 percent of the material will be transported from the staging area to Otay Landfill, which is approximately 15 miles southeast of the Shipyard Sediment Site. Although the sediment is not known to be classified as California hazardous material, it will be tested upon removal and prior to disposal. It is assumed for the purposes of this PEIR that up to 15 percent of the material will require transport to a hazardous waste facility (a Class I facility), which will most likely be the Kettleman Hills Landfill in Kings County, California, near Bakersfield.'

"Comment: Please include a description of the basis for the determination that 85 percent of the dredged material would be disposed of at Otay landfill, while 15 percent would be disposed of at the Kettleman Hills landfill. What is the assurance that only 15 percent of the dredged material would be disposed of at the Kettleman Hills landfill? Please also note that the Kettleman Hills landfill is near Hanford, not Bakersfield."

Based on the sediment quality chemistry data contained in the DTR, the sediment is not expected to be classified as a California hazardous material. Because most or all of the sediment was not expected to be classified as a hazardous material, it was assumed for the purposes of the Draft PEIR that up to 15 percent of the material could require transport to a hazardous waste facility (a Class I facility). The Draft PEIR recommends testing of the sediments upon removal and prior to disposal. Also see response to comment O-3-5.

The comment is correct that the Kettleman Hills landfill is closer to Hanford than Bakersfield.

A-2-27

The comment states: “Chapter 4.1 Transportation and Traffic

“A. Page 4.1-12, Section 4.1.4.2, Potentially Significant Impacts.

“EIR: ‘Once the dredge materials have been dried and tested, they will be loaded onto trucks for disposal at an approved landfill. For purposes of this project, it is assumed that 85 percent of the material will be transported from the staging area to Otay Landfill, approximately 15 miles southeast of the Shipyard Sediment Site. Although the sediment is not known to be classified as California hazardous material, it will be tested upon removal and prior to disposal. It is assumed for the purposes of this PEIR that up to 15 percent of the material will require transport to a hazardous waste facility (a Class I facility), which will most likely be the Kettleman Hills Landfill in Kings County, California, near Bakersfield. Based on the excavation quantity of 143,400 cubic yards (cy) and accounting for an additional 15 percent of bulk material due to the dewatering and treatment process, it is estimated that up to 250 truck trips per week could be required over an approximately 12.5-month period to remove the material. These estimates are a worst-case scenario and will be finalized during the design phase.’

“Comment: Please describe the traffic scenario that would occur in the event less or more than 15 percent of sediment would require disposal at the Kettleman Hills landfill and how it would affect the analysis of the project in the EIR. Please also note that the Kettleman Hills landfill is near Hanford, not Bakersfield.”

Based on the preliminary results of the DTR, most or all of the sediment is not expected to be classified as a California hazardous material, and therefore the Draft PEIR assumed that up to 15 percent of the material could require transport to a hazardous waste facility (a Class I facility). At the time the Draft PEIR was prepared, it could not have been known whether more or less of the material would be classified as hazardous. The project description, which included the 15 percent assumption, provides sufficient detail to assess impacts, identify mitigation measures, and to provide for meaningful public review and comment.

A-2-28

The comment states: "Page 4.1-12, Section 4.1.4.2, Potentially Significant Impacts.

"EIR: 'The most direct route to Otay Landfill is via I-5 south to State Route 54 (SR-54) east, to I-805 south. The most direct truck route to I-5 south, assumed for the proposed project condition, from potential Staging Areas 1 through 4 would be via East Harbor Drive and 28th Street. Trucks departing from Staging Area 5 would access I-5 south either directly from 24th Street-Bay Marina Drive or from West 32nd Street to 24th Street-Marina Way to Bay Marina Drive. Although the sediment is not known to be classified as California hazardous material, it will be tested upon removal and prior to disposal.'

"Comment: Please describe the most direct route to the Kettleman Hills landfill."

The most direct route to Kettleman Hills landfill is I-5, approximately 300 miles north of San Diego. This route and mileage was used for analysis in the Draft PEIR.

A-2-29

The comment states: "Chapter 4.3 Hazards

"A. Page 4.3-20, Section 4.3.4.1, Potentially Significant Impacts.

"EIR: 'Once a sediment stockpile meets the analytical and strength requirements, the material would be certified for disposal, manifested, loaded into on-road trucks (typically using a large-wheeled front-end loader), weighed to document compliance with U.S. DOT regulations, transported, and deposited at the selected disposal facility.'

"Comment: Please provide a detailed description of the analytical and strength requirements that will be used to determine the appropriate landfill disposal location, including the protocol that would be followed, the criteria upon which this protocol is based, and the thresholds that would require disposal at the Kettleman Hills landfill rather than Otay landfill. Please also provide a reference for the U.S. DOT weighting regulation."

CEQA does not require that the details of stockpiling testing be included in the Draft PEIR. Complete details of the stockpile testing will be provided in the Remedial Action Plan which will be submitted in response to TCAO Directive B.1.g. Sediment stockpiles must be tested to determine if the wastes are hazardous as defined by California Code of Regulations (CCR) Title 22 section 66261.3 et seq. This testing is required by Waste Discharge Requirements Order No. 90-09 for Otay landfill and CCR Title 27 section 20164. DOT Weighting Regulations are provided in the Code of Federal Regulations sections 657 and 658 (http://ops.fhwa.dot.gov/freight/sw/regulations/index.htm).

A-2-30

The comment states: "Chapter 4.6 Air Quality

"A. Section 4.6.3.1, Thresholds for Construction Emissions, Page 4.6-8; Section 4.6.3.2, Thresholds for Operational Emissions, Page 4.6-8; and Section 4.6.4.1, Less Than Significant Impacts, Fugitive Dust, Page 4.6-11.

"Comment: Thresholds for construction and operational emissions in Sections 4.6.3.1 and 4.6.3.2 do not include a threshold for emissions of fine particulate matter ($PM_{2.5}$). However, the discussion of fugitive dust impacts on page 4.6-11 states that emissions of $PM_{2.5}$ are less than significant because emissions are relatively small and do not exceed the significance threshold for $PM_{2.5}$. How was it determined that $PM_{2.5}$ emissions do not exceed a significance threshold, when no threshold is identified? We suggest revising this section to include a quantitative threshold for $PM_{2.5}$, particularly because the San Diego Air Basin is a state non-attainment area for $PM_{2.5}$. Furthermore, we would suggest using the U.S. Environmental Protection Agency's "Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards" threshold of 55 pounds per day (published September 2005."

The comment is correct. The text in section 4.6.4.1 states that the fugitive dust emissions (PM_{10} and $PM_{2.5}$) would be below the significance thresholds. This is incorrect as there is currently no threshold for $PM_{2.5}$. The text will be corrected in the Final EIR. See Appendix A, Errata, of this RTC document. However, should the County adopt the 55 pounds/day threshold referenced in the comment, the impact would remain below a level of significance.

A-2-31

The comment states: "B. Section 4.6.4.1, Less than Significant Impacts, Regional Air Quality Strategy, Page 4.6-10.

"EIR: 'Although the proposed project would exceed the construction threshold for NO_X, the proposed project does not obstruct implementation of the RAQS.'

"Comment: Please explain the rationale for the conclusion quoted above, which appears to be internally inconsistent."

Since the RAQS is based on local General Plans, projects that are deemed consistent with the General Plan are found to be consistent with the air quality plan. The proposed project would not result in any population growth and is consistent with the City's General Plan. In addition, the proposed project is not expected to result in any increase in long-term regional air quality impacts. Therefore, the Draft PEIR concluded that project will not conflict with the RAQS.

A-2-32

The comment states: "C. Section 4.6.4.1, Less than Significant Impacts, Fugitive Dust, Page 4.6-11.

"Comment: This EIR section does not include a summary of the methodology for the analysis, including construction assumptions, the source of the emissions factors, and any models used in the analysis. The methodology for the analysis, construction assumptions, and model descriptions are provided in the air quality technical report in Appendix G. It would helpful for the reader to have a description of this information provided in this section of the EIR. In addition, neither the Draft EIR nor the air quality technical report provides the source for the emissions factors used to determine criteria pollutant emissions, which should be included."

As stated in the air quality report, construction of the proposed project largely involves dredging, handling, and removal of wet material. As a result, little fugitive dust is expected to be generated by these operations. However, fugitive dust could be generated as construction equipment or trucks travel on and off the construction site and during the pad construction (if necessary). The fugitive dust emissions from the haul trucks were modeled using the EMFAC2007 emission rates. The off-road equipment emissions were calculated using AP-42 emission rates.

A-2-33

The comment states: "Comment: Please identify why CO_2 emissions are included in Table 4.6-3, Daily Construction Emissions by Phase (lbs/day), and Table 4.6-4, Peak Daily Construction Emissions (lbs/day). This section of the EIR does not include any analysis related to emissions of CO_2. It may be appropriate to delete this information from this section of the EIR."

The CO_2 emissions are included in Section 4.6, Air Quality, for disclosure purposes only. More detailed information about the CO_2 emissions is included in Section 4.7, Climate Change and Greenhouse Gas Emissions.

A-2-34

The comment states: "Comment: In Table 4.6-3, a list of construction equipment is only provided for the 'Covering of Sediment Near Structure Phase.' Please provide the equipment assumptions for all construction phases."

The Air Quality Study prepared for the project and included as Appendix G to the Draft PEIR included a list of construction equipment for all construction phases of the proposed project.

A-2-35

The comment states: "Comment: The construction phases listed in Table 4.6-4, Peak Daily Construction Emissions (lbs/day) and Table 4.6-3, Daily Construction Emissions by Phase (lbs/day), are inconsistent. Table 4.6-4, Peak Daily Construction Emissions (lbs/day), includes a Dredging Operations phase that is not included in Table 4.6-3, Daily Construction Emissions by Phase (lbs/day). It is unclear which construction activities would occur during the Dredging Operations phase and are contributing to the peak daily construction emissions. We suggest identifying construction phases listed in Table 4.6-3 that are included in the Dredging Operations phase."

The phases that contribute to the peak daily construction emissions include the Dirt and Debris Removal, Dredging of the Project Site, Landside Staging Area - Operations, and the Covering of Sediment Near Structures.

A-2-36

The comment states: "D. Section 4.6.4.1, Less than Significant Impacts, Health Risk Assessment, Pages 4.6-11 through 4.6-15.

"Comment: We would suggest including a figure that identifies the truck routes and location of the residences included in the HRA to clarify the analysis."

The commenter's request is noted. Although such a figure may provide additional visual detail, the analysis contained in the Draft PEIR is sufficient in detail to assess impacts, identify mitigation measures, and to provide for meaningful public review and comment. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

A-2-37

The comment states: "EIR: 'Perkins Elementary School is located within 0.25 mile of Staging Areas 1 and 2. Significant health risks are not expected to result from the operation of equipment at the staging areas. Assuming the peak daily emissions shown in Table 4.6-4 occur continuously for 2.5 years (a conservative assumption) results in lifetime cancer risk levels below 1.5 in a million at Perkins Elementary School.'

"Comment: The text prior to the EIR text quoted above includes an analysis and methodology that only discusses truck trips and therefore it appears as though the operation of construction equipment at the staging areas was not included in the HRA. Please clarify, and if the analysis only includes truck trips, explain the basis for determining that construction equipment would not contribute to an exceedance of the lifetime cancer risk threshold. We would suggest including the construction equipment operation in the HRA analysis, if it is not included already."

Significant health risks would not result from the operation of equipment at the staging areas because even using a very conservative screening model, and assuming the peak daily emissions (shown in Table 4.6-4 of the Draft PEIR) occur continuously for 2.5 years, the results in lifetime cancer risk levels are below 1.5 in a million at the Perkins Elementary School.

A-2-38

The comment states: "E. Section 4.6.4.2, Potentially Significant Impacts, Equipment Exhaust and Related Construction Activities, Pages 4.6-16.

"EIR: 'In addition, Mitigation Measures 4.6.8 through 4.6.14 would also reduce the generation of NO_X emissions in the area through the use of retrofitted diesel powered equipment, low-NO_X diesel fuel, and alternative fuel sources. However, there is no reasonable way to ensure that that retrofitted diesel-powered equipment, low-NO_X diesel fuel, and alternative fuel sources would be available during the construction period; therefore, it is not possible to quantify reductions in NO_X emissions that would result from implementation of Mitigation Measures 4.6.8 through 4.6.14.'

"Comment: An emissions reduction estimate can be made for some of the mitigation measures as written. The URBEMIS 2007 model and South Coast Air Quality Management District's CEQA Air Quality Handbook provide emission reduction estimates for construction mitigation measures. We suggest providing estimates for the listed mitigation measures, assuming that they would be implemented. Include any additional feasible mitigation measures from these sources that may apply to the proposed project."

It is not feasible to know the amount and type of retrofitted diesel-powered construction equipment that would be available for use at the time of project construction. Therefore, it is too speculative to quantify the reductions provided by these measures since the percentage of retrofitted equipment cannot be known at this time. Use of such equipment, combined with low-NO_X diesel fuel, and alternative fuel sources would reduce the emissions, but the extent of the reduction cannot be quantified since the availability of such equipment is unknown.

A-2-39

The comment states: "Furthermore, please explain why there is no reasonable way to ensure that the required equipment and technology would be available, and include this as a reason why this impact is significant and unavoidable. Please also explain why the EIR cannot require the use of retrofitted diesel powered equipment, low-NO_X diesel fuel, and alternative fuel sources as mitigation measures, since these measures ordinarily are feasible and available."

See response to comment A-2-38. The timing of the project is of high priority, both because the development and issuance of the TCAO has been underway for approximately 10 years, and because the timing of implementation will attempt to address the concerns expressed earlier in the comment letter about avoiding impacts to marine terminal and shipyard contract work to the greatest extent feasible. Therefore, it is unknown at this time what percentage of the construction equipment could be replaced by retrofitted diesel powered equipment, low-NO_X diesel fuel, and alternative fuel sources.

A-2-40

The comment states: "F. Section 4.6.4.2, Potentially Significant Impacts, Odors, Pages 4.6-16.

"EIR: 'Adherence to the mitigation measures identified for equipment would reduce impacts associated with objectionable odors from the operation of diesel-powered construction equipment.'

"Comment: Please explain why the mitigation measures proposed to reduce emissions of criteria pollutants would also reduce odors related to construction equipment to a less than significant level. Additionally, the discussion of impacts for criteria pollutants determined that it cannot be ensured that these mitigation measures would be fully implemented; therefore, impacts related to NO_X emissions are significant and unavoidable. If these measures cannot be fully implemented, why wouldn't odor emissions also be significant and unavoidable?"

The Draft PEIR identifies odors as potentially significant impacts due to multiple factors, one of which is construction equipment. Adherence to the mitigation measures identified for equipment would reduce impacts associated with objectionable odors from the operation of diesel-powered construction equipment. Mitigation measures that will be implemented to reduce odors from diesel construction equipment include Mitigation Measure 4.6.11 (requires that equipment engines are maintained in good condition and in proper tune per manufacturer's specification), Mitigation Measure 4.6.12 (requires that construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, is turned off when not in use for more than 5 minutes), and Mitigation Measure 4.6.13 (requires that, to the extent feasible, construction operations rely on the electricity infrastructure surrounding the construction site rather than electrical generators powered by internal combustion engines). All of these measures will reduce the potential impact of odors associated with construction equipment.

Impacts related to NO_X emissions are significant and unavoidable during the dredging and landside treatment phases at the staging areas. Emissions and associated odors from equipment operating in the Bay waters during dredging and at the staging areas are substantially farther from the various sensitive receptors than the haul trucks driving down streets adjacent to sensitive receptors. Also, the significant NO_X emissions are occurring in locations further removed from the sensitive receptors and therefore odors associated with these emissions would not be significant and adverse.

A-2-41

The comment states: "G. Section 4.6.4.2, Potentially Significant Impacts, Odors, Pages 4.6-16 and 4.6-17.

"EIR: 'With implementation of this measure, and given the distance between the active areas within the potential Staging Areas and the nearest sensitive receptors, it is anticipated that odor impacts would be reduced to less than significant with the adherence to identified mitigation measures (Threshold 4.6.5).'

"Comment: Please identify the nearby sensitive receptors and the distance between these receptors and the staging areas. Also, please identify the evidence that supports this conclusion."

As stated in Appendix G to the Draft PEIR, "the closest sensitive receptors to the project site are residences located approximately 300 feet from the Staging Areas." The Draft PEIR provides a reasonable range of project alternatives and potential staging areas and does not select a preferred alternative or staging area. Once a project has been selected, detailed analyses will be provided in a site-specific environmental document, including any staging area(s) to be used.

A-2-42

The comment states: "H. Section 4.6.4.3, Mitigation Measures, Pages 4.6-17 through 4.6-21.

"Comment: Mitigation measures are included for fugitive dust emissions because of San Diego Air Pollution Control District requirements. However, the analysis identifies no significant impacts. Generally, it is inappropriate to identify mitigation measures for non-significant impacts. We would suggest moving these mitigation measures to the impact analysis and stating that compliance with these measures would occur, rather than listing them as mitigation."

Although fugitive dust impacts are not expected to exceed the construction emissions thresholds, adherence to San Diego Air Pollution Control District (APCD) requirements is required of all development within the SDAB. The Draft PEIR included incorporation of these requirements as Mitigation Measures 4.6.1 through 4.6.7 to ensure implementation of these standard requirements/precautionary mitigation measures as part of the project's Mitigation Monitoring and Reporting Program (MMRP). The comment is noted, but since the measures are appropriate regardless of whether they are labeled mitigation, conditions of approval, or project features, no change to the Draft PEIR is deemed necessary.

A-2-43

The comment states: "I. Section 4.6.5, Cumulative Impacts, Pages 4.6-21 and 4.6-22.

"Comment: The cumulative analysis discusses ozone and ozone precursors. However, the SDAB is also in non-attainment for PM_{10} and $PM_{2.5}$. Even though the proposed project would not result in direct impacts related to these pollutants, a cumulative impact may still occur. Therefore, we suggest revising this analysis to address cumulative impacts related to PM_{10} and $PM_{2.5}$. This revision would potentially result in the identification of a new significant cumulative impact."

The Draft PEIR identifies that the proposed project will contribute to adverse cumulative air quality impacts. Section 4.6.5 also identifies the cumulative short-term construction impacts of the proposed project would remain significant and unavoidable. Therefore, the revision to the cumulative analysis in the Draft PEIR is not necessary.

A-2-44

The comment states: "Chapter 4.7 Climate Change and Greenhouse Gas Emissions

"A. Section 4.7.4.1, Less than Significant Impacts, GHG Emissions, Page 4.7-11.

"EIR: 'To date there is insufficient information to establish formal, permanent thresholds by which to classify projects with relatively small, incremental contributions to the State's total GHG emissions as cumulatively considerable or not.'

"Comment: The Bay Area Air Quality Management District has adopted a quantitative threshold for annual project-level GHG emissions, and several other districts and jurisdictions have proposed interim quantitative thresholds, including the County of San Diego and South Coast Air Quality Management District. In addition, in August 2010, the City of San Diego issued a memorandum to the Environmental Analysis Section titled 'Updated – Addressing Greenhouse Gas Emissions from Projects Subject to CEQA.' This memorandum proposes a 900 metric ton CO_2 equivalent screening level threshold for determining when potential project-level GHG impacts may occur. The GHG significance threshold discussion should be revised to identify a significance threshold for GHG project emissions. An Air Resources Board (ARB) threshold is discussed, but it is stated on Page 4.7-13 that the significance conclusions of the analysis do not rely upon the ARB's proposed draft guidance. We suggest that the analysis use the County of San Diego's screening level threshold for annual emissions of 900 metric tons CO_2 equivalent published in the Interim Approach to Addressing Climate Change in CEQA Documents, consistent with the approach used for determining potential impacts related to the Convair Lagoon Confined Disposal Facility Alternative found in Section 5.10.7, Greenhouse Gas Emissions/Climate Change of the EIR. Please also note that the assertion that 'insufficient information to establish formal, permanent thresholds by which to classify projects with relatively small, incremental contributions to the State's total GHG emissions as cumulatively considerable or not' is inconsistent with recent judicial decisions, which identify satisfactory thresholds of significance and methodologies for analyzing and mitigating potential impacts associated with GHG emissions. See, e.g., *Citizens for Responsible Equitable Environmental*

Development v. City of Chula Vista (2011) Cal. App. 4th, 2011 DJDAR 10267 (July 12, 2011); *Santa Clarita Organization for Planning the Environment v. City of Santa Clarita* (2011) Cal. App. 4th, 2011 DJDAR 11239 (July 28, 2011)."

The comment is correct in that the Draft PEIR did not solely rely upon the ARB's proposed draft guidance. The Bay Area Air Quality Management District (AQMD) thresholds have not been adopted by the South Coast AQMD or by the San Diego APCD, and are not applicable in Southern California. Additionally, it should be noted that the referenced City of San Diego and County of San Diego screening threshold of 900 metric tons of CO_2 equivalent is proposed as a screening tool, not as a quantitative threshold for determining the level of significant impacts. Therefore, the San Diego Water Board Cleanup Team has not changed its view that currently there is insufficient information to establish formal, permanent thresholds by which to classify projects with relatively small, incremental contributions to the state's total GHG emissions as cumulatively considerable or not.

With regard to *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista (2011)*, the Court's holding supported the Lead Agency's discretion in selecting a threshold of significance to assess the project's impact on greenhouse gas emissions and climate change (CEQA Guidelines sections 15064 and 15064.4), the Court found that, even if substantial evidence may support the use of a different threshold of significance, that the availability of another possible threshold does not constitute substantial evidence supporting a fair argument that the project may have a significant impact. For this PEIR, the San Diego Water Board Cleanup Team made a good-faith effort to "describe, calculate or estimate the amount of greenhouse gas emission resulting from a project," and consider the extent that the project may increase or decrease emissions, and whether the emission exceed the threshold of significance that the Lead Agency applies, and the extent that the project complies with statewide, regional, or local plans to achieve reductions in greenhouse gas emissions, as required by section 15064.4 of the CEQA Guidelines.

The proposed project would result in greenhouse gas emissions during the short-term "construction" activity associated with dredging and placing clean sand cover in the Bay. The proposed project does not result in an increase in operational emissions. The proposed project emissions would be well below the 900-metric ton screening threshold when the construction contribution emissions are amortized over a longer time period (i.e., 30 years). As described in the Project Description, the project is expected to take 12.5 months to complete if dredging is continuous, or 24–30 months if dredging is limited to 7 months per year. The updated total metric tons (CO_2) produced by the project would be roughly 8,408. If amortized over a 30-year period, this would be roughly 280 metric tons per year. This amount is well below the screening threshold of 900 metric tons, as well as thresholds in the ARB's proposed draft guidance for residential, commercial, and industrial projects.

A-2-45

The comment states: "B. Section 4.7.4.1, Less than Significant Impacts, GHG Emissions, Pages 4.7-11 through 4.7-13.

"Comment: We disagree with the conclusion that because construction emission are a single-event contribution limited to a short period of time, these emissions are not considered to impede or interfere with achieving the state's emission reduction objectives in AB 32 and are inherently less than significant. As stated on Page 4.17-12 of the EIR, CO_2 emissions persist in the atmosphere for a substantially longer period of time than criteria pollutant emissions. Therefore, CO_2 emissions from construction emissions would not settle out following the completion of construction. These emissions would contribute to the state and global GHG inventory. Therefore, additional analysis is required in order to provide substantial evidence of a less than significant related to construction emissions. We suggest amortizing the construction emissions over a given time period to determine the contribution of construction emissions to annual GHG emissions, and comparing annual GHG emissions to a quantitative threshold. This approach is consistent with the recommendations of the County of San Diego, the South Coast Air Pollution Control District, and the County of San Luis Obispo Air Pollution Control District. We suggest amortizing construction emissions over a 30-year time period, consistent with the guidance of the County of San Diego and the approach used for determining potential impacts related to the Convair Lagoon Confined Disposal Facility Alternative found in Section 5.10.7, Greenhouse Gas Emissions/Climate Change of the EIR."

Please see response to comment A-2-44, above. The proposed project's amortized construction emissions are approximately 280 metric tons per year, well below the suggested threshold.

A-2-46

The comment states: "C. Section 4.7.4.1, Less than Significant Impacts, GHG Emissions, Pages 4.7-11 through 4.7-13.

"Comment: Please explain why only CO_2 emissions are quantified for the proposed project. Emissions from construction equipment would also result in emissions of methane (CH_4) and nitrogen dioxide (N_2O)."

The comment is correct that CH_4 and N_2O emissions would result from construction activities. However, the emissions of these constituents are negligible when compared to the CO_2 emissions, and adding them to the total would not change the environmental analysis or significant conclusions in the Draft PEIR. It is estimated that CH_4 and N_2O would add less than 5 percent to the CO_2 emissions. Therefore, based on the calculations included in response to comment A-2-44, the annual CO_2 equivalent emissions for the project would be 295 metric tons. This amount is well below the screening threshold, as well as thresholds in the ARB's proposed draft guidance for residential, commercial, and industrial projects.

A-2-47

The comment states: "Appendix G Air Quality Analysis

"A. Section 2.6.1, Dredging and Capping Operations, Page 14.

"EIR: 'Contaminated areas under piers and pilings will be remediated through subaqueous, or in-situ, capping. In-situ capping is the placement of clean material on top of the contaminated sediment.'

"Comment: The importation of clean material would require truck trips. Were these truck trips included in the calculation of construction emissions? They are not identified in the Total Construction Emissions tables provided in Appendix A of the Draft EIR. If they were not included, please revise the analysis to include them. Additional truck trips would result in increased emissions of criteria pollutants."

The emissions calculations for the Draft PEIR assumed approximately 10 truck trips per day of sand import. It is now estimated that there will be approximately 25 to 30 sand import trips per day. The increased number of trips would result in an increase in CO_2 emissions of 301 metric tons per year, and 1.2 metric tons per day. The updated amortized annual emissions (amortized over 30 years) would be 295 metric tons, well below the 900-metric ton screening threshold referenced by the comment author.

A-2-48

The comment states: "B. Section 4.2, Greenhouse Gas Emissions/Global Climate Change, Pages 41 and 42.

"EIR: 'Therefore, for this analysis, CO_2, CH_4, and N_2O are considered due to the relatively large contribution of these gases in comparison to other GHGs produced during the project construction and operation phases.'

"Comment: Only CO_2 emissions are provided in Table F. Please revise the analysis to include the projected emissions of CH_4 and N_2O. Identifying emissions of CH_4 and N_2O would result in additional emissions of CO_2 equivalent."

Please see response to comment A-2-46 regarding emissions of CH_4 and N_2O.

A-2-49

The comment states: "C. Section 4.2, Greenhouse Gas Emissions/Global Climate Change, Page 42.

"EIR: 'The GHG emissions resulting from increased electricity demand are modeled using GHG emissions factors from the United States Energy Information Administration. The

GHG emissions resulting from the energy used for water delivery, treatment, and use are modeled using GHG emissions factors from the California Energy Commission (CEC). The GHG emissions resulting from solid waste disposal are modeled using GHG emissions factors from the California Integrated Waste Management Board, recently renamed the Department of Resources Recycling and Recovery, or CalRecycle.'

"Comment: Only quantified construction emission are provided in the report. We suggest deleting this statement or providing the calculated emissions related to electricity, water, and solid waste. These GHG sources would result in additional emissions of CO_2 equivalent."

The comment is correct that there are no operational emissions, including operational emissions from energy use. The inadvertent inclusion of this information in the Draft PEIR does not change its impact conclusions.

A-2-50

The comment states: "MITIGATION MEASURE REVISIONS FOR THE CONVAIR LAGOON ALTERNATIVE

"The following comments are provided for the mitigation measures identified within Section 5.7, Convair Lagoon Alternative to ensure that the mitigation language for this alternative is consistent with the proposed project. The comments are organized by section and page number and shown in strikeout/underline." The comment includes the suggested mitigation refinements for consistency with the proposed project.

An updated version of Section 5.7, Convair Lagoon Alternative has been included in the Draft PEIR. Changes are shown strikethrough and underline.

A-2-51

The comment provides Table 1. Cost Estimate Project Assumptions and Draft EIR Project Assumptions Consistency Analysis.

The table does not contain any substantive questions about the Draft PEIR or the analysis therein. Further, the information about the cost estimate contained in the table has been addressed throughout the responses in this document. Therefore, no further response is necessary.

NATIVE AMERICAN HERITAGE COMMISSION

Letter Code: A-3

Date: July 1, 2011

A-3-1

The comment identifies the NAHC, and is introductory to other comments in the letter. The comment states:

"The Native American Heritage Commission (NAHC), the State of California Trustee Agency for the protection and preservation of Native American cultural resources. The NAHC wishes to comment on the above-referenced proposed Project.

"This letter includes state and federal statutes relating to Native American historic properties of religious and cultural significance to American Indian tribes and interested Native American individuals as 'consulting parties' under both state and federal law. State law also addresses the freedom of Native American Religious Expression in Public Resources Code §5097.9.

"The California Environmental Quality Act (CEQA- CA Public Resources Code 21000-21177, amendments effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect" requiring the preparation of an Environmental Impact Report (EIR) per the CEQA Guidelines defines a significant impact on the environment as 'a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ...objects of historic or aesthetic significance." In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. The NAHC Sacred Lands File (SLF) search resulted in the identification of no Native American traditional or religious resources within the 'area of potential effect (APE), based on the USGS coordinates of the project location provided.

"The NAHC 'Sacred Sites,' as defined by the Native American Heritage Commission and the California Legislature in California Public Resources Code §§5097.94(a) and 5097.96. Items in the NAHC Sacred Lands Inventory are confidential, and exempt from the Public Records Act pursuant to California Government Code §6254.10."

As noted in the comment, Native American cultural resources were not identified within the area of potential effect (APE) during the SLF search, based on the USGS coordinates of the project location provided. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

A-3-2

The comment states: “Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries of cultural resources or burial sites once a project is underway. Culturally affiliated tribes and individuals may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). We strongly urge that you make contact with the list of Native American Contacts on the attached list of Native American contacts, to see if your proposed project might impact Native American cultural resources and to obtain their recommendations concerning the proposed project. Pursuant to CA Public Resources Code § 5097.95, the NAHC requests that the Native American consulting parties be provided pertinent project information. Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e). Pursuant to CA Public Resources Code §5097.95, the NAHC requests that pertinent project information be provided consulting tribal parties. The NAHC recommends avoidance as defined by CEQA Guidelines §15370(a) to pursuing a project that would damage or destroy Native American cultural resources and Section 2183.2 that requires documentation, data recovery of cultural resources.”

The Native American contacts provided have been added to the list of interested parties for the project.

A-3-3

The comment states: “Furthermore we recommend, also, that you contact the California Historic Resources Information System (CHRIS) California Office of Historic Preservation for pertinent archaeological data within or near the APE at (916) 445-7000 for the nearest Information Center in order to learn what archaeological fixtures may have been recorded in the APE.”

On August 19, 2011, the San Diego Water Board Cleanup Team contacted the CHRIS California Office of Historic Preservation, which provided the contact information for the local Information Center. The Cleanup Team contacted the local Information Center (South Coastal Information Center [SCIC]), which identified a protocol to determine if archaeological fixtures have been recorded in the APE. The project proponent is required to send a letter and fee requesting whether or not archaeological fixtures have been recorded in the APE prior to beginning the project. A records search was performed through the SCIC and no historic properties (resources eligible for or listed in the National Register of Historic Places [NRHP]) were identified in the APE. The records search included a review of all recorded historic and prehistoric archaeological resources within a 0.5 mi radius of the project area as well as a review of known cultural resource survey and excavation reports. In addition, the NRHP, California Register of Historical Resources (California Register), California Historical Landmarks, and California Points of Historical Interest listings were reviewed. The absence of archaeological items at the surface level does not preclude their existence at the subsurface level once ground-breaking activity is underway.

A-3-4

The comment states: "Consultation with tribes and interested Native American consulting parties, on the NAHC list, should be conducted in compliance with the requirements of federal NEPA (42 U.S.C 4321–43351) and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 et seq.), 36 CFR Part 800.3 (f) (2) & .5, the President's Council on Environmental Quality (CSQ, 42 U.S.C 4371 et seq. and NAGPRA (25 U.S.C. 3001–3013) as appropriate. The 1992 Secretary of the Interiors Standards for the Treatment of Historic Properties were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Also, federal Executive Orders Nos. 11593 (preservation of cultural environment), 13175 (coordination & consultation) and 13007 (Sacred Sites) are helpful, supportive guides for Section 106 consultation."

The comment pertains to federal requirements as the issuance of a Clean Water Act (CWA) Section 404 Permit and a Section 10 of the Federal Rivers and Harbors Appropriation Act of 1899 Permit by the U.S. Army Corps of Engineers (ACOE) is a federal undertaking. As the subject project property is not owned by the federal government, NAGPRA does not apply. The ACOE will determine its jurisdictional area within the project defining the federal APE. The ACOE has Native American consultation responsibilities in accordance with 36 CFR Part 800, regulations implementing section 106 of the National Historic Preservation Act (NHPA). Section 106 requires that the lead federal agency take into account what effect the project will have on resources eligible for or listed in the NRHP within the ACOE's APE. Consultation by the ACOE takes place upon receipt of the permit applications. The ACOE may use the Native American contact list previously obtained from the NAHC. See also response to comment A-3-2, above, regarding notification of Native American contacts.

A-3-5

The comment states: "Furthermore, Public Resources Code Section 5097.98, California Government Code §27491 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery'."

As part of the proposed project, a protocol will be put into place to address accidental discovery of any archeological resources and human remains in the project footprint. If, during the course of project construction, unanticipated cultural resources are discovered, work should be halted temporarily until a qualified archaeologist can evaluate the significance of the resources. If human remains are encountered during work on this project, State Health and Safety Code section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resource Code section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the NAHC, which will determine and notify a Most Likely Descendant (MLD). The MLD may inspect the site of the discovery with the permission of the landowner, or his or her authorized representative. The MLD shall complete his/her inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and analysis of human remains and items associated with Native American burials.

A-3-6

The comment states: "To be effective, consultation on specific projects must be the result of an ongoing relationship between Native American tribes and lead agencies, project proponents and their contractors, in the opinion of the NAHC. Regarding tribal consultation, a relationship built around regular meetings and informal involvement with local tribes will lead to more qualitative consultation tribal input on specific projects."

The San Diego Water Board Cleanup Team concurs with the comment and supports ongoing consultation with Native American tribes on the project.

A-3-7

The comment states: "The response to this search for Native American cultural resources is conducted in the NAHC Sacred Lands Inventory, established by the California Legislature (CA Public Resources Code 5097.94(a) and is exempt from the CA Public Records Act (c.f. California Government Code 6254.10) although Native Americans on the attached contact list may wish to reveal the nature of identified cultural resources/historic properties. Confidentiality of "historic properties of religious and cultural significance" may also be protected under Section 304 of he NHPA or at the Secretary of the Interior discretion if not eligible for listing on the National Register of Historic Places and there may be sites within the APE eligible for listing on the California Register of Historical Resources. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C, 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APEs and possibility threatened by proposed project activity."

The San Diego Water Board Cleanup Team acknowledges the cited regulations on disclosure of identified cultural resources/historic properties.

A-3-8

The comment concludes the comment letter and does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

DEPARTMENT OF TOXIC SUBSTANCE CONTROL

Letter Code: A-4

Date: July 28, 2011

A-4-1

The comment identifies the Department of Toxic Substances Control (DTSC) and is introductory to other comments in the letter. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

A-4-2

The comment states that DTSC provided comments on the project Notice of Preparation (NOP) on December 22, 2009, and requests that these comments be addressed in the Final PEIR. The following three comments were provided in the December 22, 2009, DTSC letter:

- The Draft PEIR should identify the current or historic uses at the project site that may have resulted in a release of hazardous wastes/substances, and any known or potentially contaminated sites within the proposed project area.
- The NOE says, “The cleanup remedy may include dredging, capping, and/or natural recovery. Dredged spoils may be dewatered at an onshore facility and disposed of at an appropriate landfill site.” If soil is contaminated, it must be properly disposed of and not simply placed in another location on the site. Land Disposal Restrictions (LDRs) may be applicable to such soils.
- If it is determined that hazardous wastes are, or will be, generated by the proposed operations, the wastes must be managed in accordance with the California Hazardous Waste Control Law (California Health and Safety Code, division 20, chapter 6.5) and the Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Division 4.5). Certain hazardous waste treatment processes or hazardous materials, handling, storage or uses may require authorization from the local Certified Unified Program Agency (CUPA), or DTSC.

With regard to historic uses of the site, the current and past use is ship building and repair. As stated in Section 2.1.2 of the Draft PEIR, “The San Diego Water Board has identified elevated levels of pollutants in the San Diego Bay bottom sediments adjacent to National Steel and Shipbuilding Company (NASSCO) and BAE Systems shipyards. The concentrations of these pollutants cause or threaten to cause a condition of pollution that harms aquatic life and beneficial uses designated for San Diego Bay.” As further stated in Section 3.6 of the Draft PEIR, the project is the implementation of TCAO, which requires that remedial actions be implemented within the Shipyard Sediment Site. The TCAO provides relevant evidence for naming the responsible parties, and is incorporated by reference into the Draft PEIR (as stated on page 2-12). The evidence includes, but is not limited to, documentation of historical or current activities; waste characteristics; chemical use; and storage or disposal information (refer to the Draft Technical Report for TCAO No. R9-2011-0001, Sections 2 through 11, incorporated by reference into the Draft PEIR as stated on page 2-12). Section 4.3.1.1 of the Draft PEIR also provides brief descriptions of NASSCO's and BAE System's operations and wastes generated over the years.

With regard to the cleanup remedy, Section 3.6.3 of the Draft PEIR states: "Once the dredge materials have been dried and tested, they will be loaded onto trucks for disposal at an approved landfill. For purposes of this project, it is assumed that 85 percent of the material will be transported from the staging area to Otay Landfill, which is approximately 15 miles southeast of the Shipyard Sediment Site. Although the sediment is not known to be classified as California hazardous material, it will be tested upon removal and prior to disposal. It is assumed for the purposes of this Draft PEIR that up to 15 percent of the material will require transport to a hazardous waste facility (a Class I facility), which will most likely be the Kettleman Hills Landfill in Kings County, California, near Bakersfield." The proposed project does not include relocation of contaminated soils from one portion of the site to another. Where removal of contaminated sediment is not feasible, application of clean sand cover may be conducted to ensure that no migration of contaminated sediment occurs.

With regard to hazardous wastes associated with the proposed cleanup project, an assessment of the proposed project's impacts with regard to hazardous wastes is included in Section 4.3 of the Draft PEIR. The mitigation measures contained in that section address the topics of Secondary Containment, Dredging Management Plan, Contingency Plan, Health and Safety, Plan, Communication Plan, Sediment Management Plan, Hazardous Materials Transportation Plan, and a Traffic Control Plan.

The San Diego Water Board is the lead Agency for the project, and responsible agencies are identified in Chapter 3.0 of the Draft PEIR. In addition, approvals and or permits from other agencies with waste management authority are addressed in TCAO Provision G.2, Page 31 (incorporated by reference into the Draft PEIR) which states in part that:

"The Dischargers shall properly manage, store, treat, and dispose of contaminated marine sediment and associated waste in accordance with applicable federal, state, and local laws and regulations. The storage, handling, treatment, or disposal of contaminated marine sediment and associated waste shall not create conditions of pollution, contamination or nuisance as defined in Water Code section 13050."

A-4-3

This comment restates the third comment included in the DTSC NOP comment letter, discussed above. Refer to response A-4-2, above.

A-4-4

The comment states that the U.S. Navy has identified areas where munitions and ordnances have been found and areas with high potential of having munitions and ordnances in more than a hundred locations along the channels. The comment further states that there are at least two areas where munitions have been found at the project location referenced in the Draft PEIR and a few more such areas are located in close proximity to the project, and includes a map. The San Diego Water Board Cleanup Team concurs with the comment. A protocol will be developed for the project to address any munitions and ordnances found during the project.

Applicable mitigation measures will be revised as follows:

Mitigation Measure 4.3.2: **Dredging Management Plan.** The contractor shall ensure that a Dredging Management Plan (DMP) containing Standard Operating Procedures (SOPs) for the project is developed prior to the initiation of dredging and implemented for the duration of the dredging activity. The DMP will include the following measures to prevent release of hazardous materials during construction activities:

- Personnel involved with dredging and handling the dredged material will be given training on their specific task areas, including:
  - Potential hazards resulting from accidental oil and/or fuel spills;
  - Proper dredging equipment operation; ~~and~~
  - Proper silt curtain deployment techniques; and
  - Proper response in the event that ordnance or munitions are encountered.
- All equipment will be inspected by the dredge contractor and equipment operators before starting the shift. These inspections are intended to identify typical wear or faulty parts.
- Required instrumentation to avoid spillage of dredging material will be identified for each piece of equipment used during dredging operations.
- Personnel will be required to visually monitor for oil or fuel spills during construction activities.
- In the event that a sheen or spill is observed, the equipment will be immediately shut down and the source of the spill

identified and contained. Additionally, the spill will be reported to the applicable agencies presented in the DMP.

- All personnel associated with dredging activities will be trained as to where oil/fuel spill kits are located, how to deploy the oil-absorbent pads, and proper disposal guidelines. The dredging barge shall have a full complement of oil/fuel spill kits on board to allow for quick and timely implementation of spill containment.
- The use of oil booms will be deployed surrounding the dredging activities. In the event that a spill occurs, the oil and/or fuel will be contained within the oil boom boundary. The silt curtains may also act as an oil boom, provided absorbent material is deployed during a spill.
- Shallow areas along the haul route will be mapped and provided to the dredge operator for review. These areas will be avoided to the extent possible to prevent propeller wash resuspension of sediment.
- Load-controlled barge movement, line attachment, and horsepower requirements of tugs and support boats at the project site will be specified to avoid resuspension of sediment.
- Barge load limits and loading procedures will be identified, and the appropriate draft level will be marked on the materials barge hull.
- <u>A protocol will be developed for the project in conjunction with the U.S. Department of the Navy (DON) to address any munitions and ordnance found during the project. As required for projects within the San Diego Bay Ship Channels, the project shall be coordinated with the Navy NAVFAC Southwest Division in San Diego for munitions clearance.</u>

Implementation of the DMP will be verified by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board). <u>The DON will be provided an opportunity to review and comment on the DMP, particularly with respect to ordnance and munitions identified in proximity to the Shipyard Sediment Site.</u>

Mitigation Measure 4.3.3: **Contingency Plan.** The contractor shall ensure that a Contingency Plan has been developed prior to the initiation of dredging and implemented for the duration of the dredging activity to address equipment and operational failures that could occur during dredging operations. The Contingency Plan will also address the potential to encounter munitions or ordnance. The Contingency Plan will include the following measures to prevent release of hazardous materials during construction activities:

- Actions to implement in the event of equipment failure, repair, or silt curtain breach. These include:
  - Communication to project personnel;
  - Proper signage and/or barriers alerting others of potentially unsafe conditions;
  - Specification for repair work to be conducted on land and not over water;
  - Identification of proper spill containment equipment (e.g., spill kit);
  - A plan identifying availability of other equipment or subcontracting options;
  - Emergency procedures to follow in the event of a silt curtain breach;
  - Incident reporting and review procedure to evaluate the causes of an accidental silt curtain breach and steps to avoid further breaches; and
  - Response procedures in the event of barge overfill.
- Actions to implement in the event that munitions or ordnance are encountered during project activities. These include:
  - Immediate stoppage of all in-water work activities until further notice to proceed is received;
  - Contact the Site Safety Manager;
  - Refer to the Contingency Plan section that presents the emergency contact name(s) and telephone number(s) for NAVFAC Southwest Division; and
  - Contact NAVFAC Southwest Division personnel. The recovery and disposal of any munitions and/or ordnance item(s) found will become the responsibility of NAVFAC Southwest Division.

Implementation of the Contingency Plan will be verified by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board).

Mitigation Measure 4.3.4: **Health and Safety Plan.** The contractor shall ensure that a Health and Safety Plan (H&S Plan) has been developed prior to the initiation of dredging and implemented for the duration of the dredging activity to protect workers from exposure to contaminated sediment. The H&S Plan will include the following requirements at a minimum:

- Training for operators to prevent spillage of sediment on the bridges during dredging activities
- Training for operators in decontamination and waste containment procedures
- <u>Training for operators in appropriate notification/handling procedures for munitions/ordnance</u>
- Identification of appropriate Personal Protection Equipment (PPE) for all activities, including sediment removal, management, and disposal
- Certification of personnel under safety regulations such as Occupational Safety and Health Administration (OSHA) 29 Code of Federal Regulations (CFR) 1910.120
- Documentation that requires that health and safety procedures have been implemented

Implementation of the H&S Plan will be verified by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board).

A-4-5

The comment states that the Navy is currently conducting sonar and electromagnetic scans of the channel focused on the areas containing and potentially containing munitions, for possible response actions, and that the project is undertaken by the NAVFAC Southwest Division under the project reference: MRP Site 100 San Diego Bay Primary Ship Channels. The comment further states that any projects within the San Diego Bay Ship Channels must be coordinated with the Navy NAVFAC Southwest Division in San Diego for munitions clearance.

The San Diego Water Board Cleanup Team concurs with the comment. As outlined in more detail in Response A-4-4 above, a protocol will be developed for the project to ensure coordination with the Navy NAVFAC Southwest Division in San Diego for munitions clearance. Appropriate mitigation measures in Section 4.3 have been revised to include this protocol. Please refer to response A-4-4.

A-4-6

This comment provides contact information for the appropriate staff member at DTSC in the event of questions or concerns. No further response is necessary.

CALIFORNIA STATE LANDS COMMISSION

Letter Code: A-5

Date: August 1, 2011, Received August 3, 2011

A-5-1

The comment identifies the CSLC and is introductory to other comments in the letter. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

A-5-2

The comment describes the CSLC jurisdiction. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

A-5-3

The comment provides background information regarding the CSLC jurisdiction. No further response is necessary.

A-5-4

The comment provides background information regarding the Tentative Clean Up and Abatement Order (CAO) No. 2011-0001. No further response is necessary.

A-5-5

The comment summarizes project information included in the Draft PEIR. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

A-5-6

The comment includes a description of the CSLC's agency jurisdiction. The letter states that: "1. Based on the information provided in the PEIR and a review of in-house records, the Project will involve: (1) ungranted sovereign lands under the leasing jurisdiction of the CSLC; and (2) sovereign lands legislatively granted originally to the city of San Diego and subsequently transferred to the San Diego Port District (District) pursuant to Chapter 67, Statutes of 1962, and as amended, minerals reserved. Dredging and remediation work on ungranted and granted sovereign lands, as specified in the proposed Project, will require a lease by the CSLC (please refer to www.slc.ca.gov for a lease application). Accordingly, please add the CSLC as a responsible and trustee agency in Table 3-1 of the PEIR. Specific information on the CSLC's jurisdiction is provided above."

The CSLC is already identified as a responsible and trustee agency in Table 3-1 of the Draft PEIR, which acknowledges the CSLC jurisdiction for authorization of dredging on legislatively granted sovereign lands and remediation activity on ungranted sovereign lands. The San Diego Water Board will ensure that the responsible parties identified in the TCAO secure all permits necessary for the implementation of the proposed Shipyard Sediment Remediation Project, including the lease application identified in the comment.

A-5-7

The comment includes a description of the CSLC's understanding of Program Environmental Review and Mitigation. The comment states that: "2. Section 2.1.3 (Level of Review) discusses the 'program-level' of review in the PEIR and states that CEQA permits the 'Lead Agency' to use 'tiering' to 'defer analysis of certain details of later phases of long-term linked or complex projects until those phases are up for approval.' However, to avoid the improper deferral of mitigation, a common flaw in program-level environmental documents, mitigation measures should either be presented as specific, feasible, enforceable obligations, or should be presented as formulas containing "performance standards which would mitigate the significant effect of the project and which may be accomplished in more than one specified way" (CEQA Guidelines §15126.4, subd. (b).)[1]

The San Diego Water Board Cleanup Team concurs with the comment, and concludes that the mitigation measures included in the Draft PEIR and updated as appropriate in this RTC document meet the requirements of CEQA.

A-5-8

The comment continues with a description of the CSLC's understanding of Program Environmental Review and Mitigation. The comment states that: "Section 2.1.4 (Intended Uses of the PEIR) states "Future decisions and implementing actions following certification of the PEIR and approval of the Project will be subject to subsequent environmental review pursuant to CEQA." The PEIR should make an effort to distinguish what activities and their mitigation measures are being analyzed in sufficient detail to be covered under the PEIR without additional project specific environmental review, and what activities will trigger the need for additional environmental analysis." (CEQA Guidelines § 15168, subd. (c).)

CEQA requires a Lead Agency to prepare an EIR for a project "at the earliest possible stage," yet, at the same time, it recognizes "additional EIRs might be required for later phases of the project." (*City of Carmel-by-the-Sea v. Board of Supervisors* (1986) 183 Cal. App. 3d 229, 250). As such, CEQA permits a Lead Agency to use "tiering" to "defer analysis of certain details of later phases of long-term linked or complex projects until those phases are up for approval." (*Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* (2008) 40 Cal. 4th 412, 431–432.) In particular, tiering is appropriate "when it helps

1 The "State CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

a public agency to focus upon the issues ripe for decision at each level of environmental review and in order to exclude duplicative analysis of environmental effects examined in previous environmental impact reports." (*In re Bay-Delta*, (2008) 43 Cal. 4^{th} 1143, 1170.) Therefore, the San Diego Water Board, as the Lead Agency for the Draft PEIR, concludes that the components of the Draft PEIR were appropriately described in sufficient detail in the documentation of impacts, mitigation measures, and strategies to provide for meaningful public review and comment.

A description of the requested information is provided in Section 2.1.3 of the Draft PEIR, which states that: "The Draft PEIR identifies the anticipated effects of the sediment removal project. The Draft PEIR also identifies five alternative sites within which the dewatering and treatment of dredge material could occur. The Draft PEIR provides sufficient information to the appropriate level of detail to permit 'reasonable and meaningful environmental review' of the effects of the project so that the San Diego Water Board may make decisions regarding approval of the proposed sediment removal project and selection of one or more of the potential staging area sites. The PEIR, once certified, may be used as an environmental clearance baseline against which to evaluate future site-specific implementation approvals and permits for implementation of the proposed project." Thus, the "tiering" process and need for further environmental review will be specific to the selection of the dewatering and treatment site(s) for the dredged materials.

A-5-9

The comment continues with a description of the CSLC's understanding of Program Environmental Review and Mitigation. The comment states that: "For example, Mitigation Measure (MM) 4.5.11 on page 4.5-60, related to sensitive biological resources in the vicinity of Staging Area 5, does not appear to prescribe specific, enforceable measures that would avoid or lessen the potential impact. Instead, MM 4.5.11 defers the formulation and analysis of specific measures to future consultation with the California Department of Fish and Game. The PEIR should either provide specific, stand-alone measures and analyze their effectiveness in reducing potential effects, or should clearly state that those impacts and any required mitigation would be disclosed and analyzed in a subsequent tiered document."

Mitigation Measures 4.5.10 and 4.5.11 are specific to Staging Area 5 (which may or may not be selected) and are proposed to avoid and minimize impacts to special-status species occurring within Paradise Marsh and the Sweetwater Marsh Unit of the San Diego Bay National Wildlife Refuge (NWR). As described in the PEIR, "off-site indirect effects associated with the proposed project that could affect areas within the San Diego Bay NWR would be limited to potential increases in noise and human activity at potential Staging Area 5." The potentially significant impact requiring mitigation is stated in the PEIR as follows: "If activities are conducted within the breeding season of special-status species that may occur in the Paradise Marsh area, there is a potential for disruption of nesting activities of listed species, including Belding's savannah sparrow and light-footed clapper rail, resulting in potentially significant impacts." (Page 4.5-55.) Mitigation Measure 4.5.10 pertains to restricting dewatering and treatment activities to within the western and northern portions of the staging area where existing buildings obstruct sensitive habitat areas from noise sources.

The first part of Mitigation Measure 4.5-11 states that, if Staging Area 5 is selected, the California Department of Fish and Game (CDFG) shall be notified not less than 30 days in advance and shall be given the opportunity to provide recommended measures to minimize impacts from increased noise and human activity to species in the Sweetwater Marsh Unit of the San Diego Bay NWR. All agency-recommended measures (or agency-approved substitute measures, if recommended measures are infeasible) shall be implemented throughout the duration of project activities in Staging Area 5. The second part of Mitigation Measure 4.5-11 states that the biological monitor shall inspect the site at least every 2 weeks during project activities that are conducted during the nesting season (conservatively February 1 through August 31) and shall report monthly to the San Diego Water Board.

Although the CDFG and U.S. Fish and Wildlife Service (USFWS) will ultimately have the authority to approve or disapprove proposed measures, Mitigation Measure 4.5-11 has been clarified to include anticipated agency measures as follows:

Mitigation Measure 4.5.11: If Staging Area 5 is selected, the California Department of Fish and Game (CDFG) shall be notified not less than 30 days in advance and shall be given the opportunity to provide recommended measures to minimize impacts from increased noise and human activity to species in the Sweetwater Marsh Unit of the San Diego Bay National Wildlife Refuge (NWR). All agency-recommended measures (or agency-approved substitute measures, if recommended measures are infeasible) shall be implemented throughout the duration of project activities in Staging Area 5. <u>At a minimum, the applicant shall conduct pre-activity nesting bird surveys within 300 feet of all noise-intensive activities if such activities will be initiated within the breeding season for special-status species (conservatively February 1 through August 31). If nesting birds are identified within 300 feet of activities, a qualified (and, if appropriate based on the species, agency-permitted) biological monitor shall be present on site to observe the behavior of the nesting birds during initiation of activities. The biological monitor shall have the authority to temporarily halt or redirect activities in the event that adverse effects to the birds are evident (e.g., there is a risk of nest failure or other indication of harassment, as defined by the Endangered Species Act). If adverse effects to nesting birds appear to be likely, the monitor shall recommend additional measures (e.g., installation of sound barriers, limiting duration of activities, relocating</u>

activities to another area, or postponing activities until the nest is no longer active) in concert with resource agency personnel.

Regardless of whether nesting birds are identified during pre-activity nesting bird surveys, t~~T~~he biological monitor shall inspect the site and any adjacent areas supporting potential nesting habitat at least every 2 weeks during project activities that are conducted during the nesting season (conservatively February 1 through August 31) and shall report monthly to the San Diego Water Board.

See response to A-5-8 for more information regarding selection of staging areas. The mitigation measures for staging area 5, which may or may not be chosen, were specified due to the identification of sensitive biological resources in the applicable Draft PEIR technical report. The inclusion of additional information regarding the staging area does not preclude additional environmental review should staging area 5 be selected.

A-5-10

The comment includes a description of the CSLC's understanding of Cultural Resources impacts, and states: "The Initial Study (IS) for the Project (1) found no impact to cultural resources because the Project does not entail grading undisturbed areas on the site, and the area proposed for dredging consists of recently deposited material and undisturbed subtidal material below the depth that would include cultural resources, and (2) states that standard Best Management Practices (BMPs) will be employed as part of the Project in the event that an archaeological or paleontological resource is found during implementation."

A records and literature search was conducted at the South Coastal Information Center (SCIC) on September 12, 2011. The records search included archival and other background studies. The record search results indicated that there were prehistoric sites or deposits recorded in the vicinity of the proposed Staging Areas; however, these sites are now fully developed and/or paved. Use of the Staging Areas for the proposed project will not involve excavation; therefore, disturbance of possible remnants of these sites is not anticipated. There are no recorded prehistoric sites in the dredging footprint. If, during the course of project construction, unanticipated resources are discovered, work should be halted temporarily until a qualified archaeologist/paleontologist can evaluate the significance of the resources. If human remains are encountered during work on this project, State Health and Safety Code section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resource Code section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the NAHC, which will determine and notify an MLD. The MLD may inspect the site of the discovery with the permission of the land owner, or his or her authorized representative. The MLD shall complete his/her inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and analysis of human remains and items associated with Native American burials.

A-5-11

The comment states: "The CSLC maintains a shipwrecks database that can assist with this analysis (see http://shipwrecks.slc.ca.gov); please contact Pam Griggs of this office (contact information below) to obtain results from a search of the shipwrecks database that may contain confidential archaeological site information. The database includes known and potential vessels located on the State's tide and submerged lands; however, the locations of many shipwrecks remain unknown. Please note that any submerged archaeological site or submerged historic resource that has remained in state waters for more than 50 years is "presumed to be significant."

To clarify, the Notice of Preparation (NOP) and the Draft PEIR determined there is no "potentially significant impact" to cultural resources from the project. There is a low likelihood of underwater resources at the project site. For example, there is no historic connection between the Pier 4 project site and the Navy, and the presence of the tuna clippers in the project area was very late in the historic period. Therefore, it is unlikely that there is historic debris on the bottom of the San Diego Bay in the vicinity of the proposed project. The area to be dredged is located in an area characterized by very active ship repair facilities that have been actively operating for decades and subject to periodic maintenance dredging. There is no evidence based on current and past activities that there are shipwrecks at or near the shipyards. Despite the low likelihood of underwater resources at this location, the San Diego Water Board Cleanup Team has conducted a review of the shipwrecks database and was unable to locate any shipwrecks in or near the vicinity of the project site. The results of the requested correspondence with Pam Griggs resulted in no findings of known shipwrecks in the project area. As a portion of the project will be under jurisdiction of the ACOE under a permit per section 404 of the CWA, the results of research will be provided to the ACOE in support of the required identification efforts in the project's APE. Please see Appendix B of this document for the database search results.

A-5-12

The comment continues the description of the CSLC's understanding of Cultural Resources impacts, and states: "To address any potential impacts to submerged cultural resources and any unanticipated discoveries during the Project's construction, the BMPs should be developed into mitigation measures in the PEIR and included in the Mitigation Monitoring and Reporting Program (MMRP)."

Please see responses to comments A-5-10 and A-5-11 regarding the determination of potential significant impacts for cultural resources. CEQA Guidelines section 15126.4 (a) (3) states that "mitigation measures are not required for effects which are not found to be significant." A discussion of mitigation measures is required for significant environmental effects only. As described in the NOP and responses to comments A-5-10 and A-5-11, the proposed project does not result in potentially significant impacts to cultural resources and no mitigation is warranted. The San Diego Water Board will ensure that the responsible parties identified in the TCAO notify and consult CSLC staff in the event that any cultural resources are uncovered. The San Diego Water Board's commitment to this procedure is acknowledged in the Project Refinements described in Chapter 1 of this RTC document.

A-5-13

The comment continues the description of the CSLC's understanding of Cultural Resources impacts, and states: "The PEIR should also clearly state that the title to all abandoned shipwrecks, archaeological sites, and historic or cultural resources on or in the tide and submerged lands of California is vested in the State and under the jurisdiction of the CSLC. The CSLC requests that the RWQCB consult with CSLC staff, should any cultural resources be discovered during construction of the proposed Project."

The San Diego Water Board Cleanup Team concurs that the CSLC retains its jurisdiction of resources in the tide and submerged lands of California, and that the CSLC be notified in the event that any cultural resources are discovered. Inclusion of this information in the Final PEIR does not change the impact conclusions of the Draft PEIR. No further change to the PEIR is required. Please see responses to comments A-5-10, A-5-11, and A-5-12.

A-5-14

The comment states: "Section 4.7 of the PEIR provides a lengthy discussion of the existing setting, regulatory setting and thresholds of significance. In Section 4.7.4, the PEIR estimates that the proposed Project would generate up to 7,750 metric tons of carbon dioxide (CO_2) per year. However, the PEIR then concludes that the proposed Project's contribution to Global Climate Change (GCC) in the form of GHG emissions is less than significant (individually and cumulatively) because the emissions generated are short-term versus ongoing (permanent). The PEIR also notes that the air quality mitigation measures that would reduce emissions from construction-related vehicles and equipment would also reduce CO_2 emissions."

The comment summarizes project information included in the Draft PEIR. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

A-5-15

The comment pertains to Climate Change and Greenhouse Gas (GHG) Emissions and states: "The PEIR does not present substantial evidence to support the 'less than significant impact' conclusion for GHGs. CSLC staff suggests that 7,750 metric tons of CO_2 emissions per year be considered a significant impact that requires mitigation. (see California Air Resources Board, "Preliminary Draft Staff Proposal, Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality

Act," Attachment A, Preliminary Draft Proposal for Industrial Projects; see www.arb.ca.gov/cc/localgov/ceqa/ceqa.htm). Alternatively, CSLC staff requests that more information be added in the PEIR justifying that 7,750 metric tons of CO_2 emissions per year is less than significant, when the presumption is that emissions of over 7,000 metric tons per year for industrial projects are a significant impact to climate change."

The San Diego Water Board Cleanup Team does not agree with the comment that there is a lack of substantial evidence in the Draft PEIR (and supporting Appendix G) regarding GHG impacts. As the Draft PEIR states (Section 4.7.4), the "purpose of calculating the emissions is for information purposes as there is no quantifiable emissions threshold. Rather, the project's incremental contribution to GCC would be considered cumulatively significant if, due to the size or nature of the proposed project, it would generate a substantial increase in GHG emissions relative to existing conditions." As stated in the Draft PEIR, the cited report from the California Air Resources Board remains in a preliminary draft form. Thus, there are no quantitative CEQA thresholds of significance in place for any projects located within the area of the project. Furthermore, as stated in the Draft PEIR, "the project's construction GHG emissions are a single-event contribution limited to a short period of time and therefore are not considered to impede or interfere with achieving the state's emission reduction objectives in AB 32."

While the Draft PEIR did not rely on the preliminary draft thresholds in the cited California Air Resources Board report, it is notable that the projected GHG emissions are only slightly higher than the proposed 7,000-metric ton threshold for the ongoing operation of industrial facilities.[1] The project would actually fall well below the metric ton screening threshold if the single-event contribution emissions are amortized over a longer time period (i.e., 30 years). As specified in the Project Description, the project is expected to take 12.5 months to complete if dredging is continuous, or 24–30 months if dredging is limited to 7 months per year. Thus based upon information included in Section 4.7.4 of the Draft PEIR, the total CO_2 produced by the project would be roughly 8,060 metric tons. If amortized over a 30-year period, this would be result in approximately 269 metric tons per year. This amount is well below the thresholds in the ARB's proposed draft guidance for residential, commercial, and industrial projects.

A-5-16

This comment also pertains to Climate Change and GHG Emissions. The comment states: "Similarly, CSLC staff requests that the PEIR reanalyze the appropriateness of the PEIR's conclusion that the cumulative impacts to GCC are less than significant with mitigation incorporation or potentially significant with mitigation incorporation."

Please see response to comment A-5-15.

[1] The California Air Resources Board Preliminary Staff Proposal focused on four main emissions from industrial facilities other than power plants.

SAN DIEGO GAS AND ELECTRIC

Letter Code: O-1

Date: August 1, 2011

O-1-1

The comment states: “At the request of San Diego Gas & Electric (SDG&E), ENVIRON International Corporation (ENVIRON) has prepared this letter to highlight potential critical issues associated with draft documents supporting the Environmental Impact Report (EIR) for the proposed San Diego Shipyard Sediment Site (Site) remediation. Although four documents were reviewed,[1] the primary focus of ENVIRON’s comments concerns the March 31, 2011, Draft Water Quality Technical Report, Shipyards Sediment Site, San Diego Bay, San Diego, CA by Geosyntec Consultants (Geosyntec, 2011).”

The comment is introductory to other comments in the letter. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

It appears that the incorrect documents were reviewed, as the above documents are cited as “Draft” from March 31, 2011. Furthermore, comments received refer to incorrect page numbers, text that does not exist, and incorrect Tables. The proper documents were released for public review on June 16, 2011, and are located on the San Diego Water Board website: http://www.swrcb.ca.gov/rwqcb9/water_issues/programs/shipyards_sediment/ceqa.shtml.

O-1-2

The comment states: “1. The proposed water column turbidity monitoring plan is insufficient to characterize the potential migration of contaminated sediment to areas adjacent to the Site remedial footprint. On page 19 of Geosyntec (2011), it is noted that turbidity samples will be collected from the water column at locations 250 and 500 feet from active dredging operations. This monitoring will be conducted to evaluate the effects on water quality due to contaminated sediment suspended during dredging. However, this data will be insufficient for characterizing the deposition of contaminated footprint sediment to areas directly adjacent to the footprint.

“For example, at the northwestern end of the footprint, the nearest turbidity monitoring station is located 100 feet beyond the boundary of the non-footprint polygon SW29. There will be no data available to evaluate potential contamination with suspended footprint sediments that deposit to SW29. Although the CRWQCB found in the September 15, 2010

[1] 1) Draft Water Quality Technical Report, Shipyards Sediment Site, San Diego Bay, San Diego, CA; 2) Draft Marine Biological Resources Assessment Technical Report, Shipyard Sediment Site, National Steel and Shipbuilding Company (NASSCO), BAE Systems San Diego Ship Repair, Inc.; 3) Draft Hazards and Hazardous Materials Technical Report, Shipyards Sediment Site, San Diego Bay, San Diego, CA; and 4) Draft Traffic Impact Analysis, Shipyard Sediment Project.

version of the DTR that SW29 did not exhibit Beneficial Use Impairment and did not warrant remedial action, SW29 may be investigated in future CRWQCB action, as noted by David Barker (Chief of the Water Resource Protection Branch of San Diego Regional Water Quality Control Board) during his March 3, 2011 deposition (Barker, 2011 – statements starting at 11:49 AM).[1] Additionally, data will be unavailable for the area 100 feet to the northwest of SW29, which may be included in a potential SW29 investigation.

The San Diego Water Board Cleanup Team does not agree with the comment, as the comment misinterprets the citation in the Geosyntec (2011) report. The comment is taken out of context, as the referenced monitoring requirements from the TCAO are required only if silt curtains are not deployed during remediation. The Draft PEIR clearly states that double silt curtains will be used as a required mitigation measure. As specified in Mitigation Measure 4.2.3, double silt curtains would be used to contain the resuspension of suspended sediments and prevent the dispersal of constituents of concern outside the dredging area. (See also Mitigation Monitoring and Reporting Program, Table 7-1, and Section 4.2 of the Draft PEIR.)

The Draft PEIR also prescribes mitigation monitoring as reflected in Table 7-1, the Mitigation Monitoring and Reporting Program. Further, the TCAO requires the submittal of a Remedial Action Plan, which will specify the proposed water quality monitoring, to the San Diego Water Board for review. The Remedial Action Plan may be conditioned by the San Diego Water Board. Lastly, as described in the Draft PEIR and supporting report (Geosyntec 2011), the project will be required to obtain permits (i.e., section 404 and 401) from regulatory agencies, which may impose monitoring requirements specific to the project. It should also be noted that the TCAO requires the collection of post-dredge samples from all 65 polygons. While the Cleanup Team concurs that migration of contaminants is a potential concern, the mitigation measures in the Draft PEIR are expected to prevent contamination of non-remedial areas.

O-1-3

"As the area to the northwest of the footprint may incur future sediment investigations by CRWQCB, ENVIRON recommends that the potential contamination of surface sediments in these areas by the proposed Site dredging activities be better characterized by relocating the turbidity monitoring locations proposed by Geosyntec (2011) to stations closer to the immediate vicinity of the footprint boundary. Further safeguards may include the use of additional turbidity monitoring locations. Either option should include placement of a monitoring station not more than 50 feet from the northwest boundary of the footprint (approximately in the middle of polygon SW29). Additionally, ENVIRON recommends a pre- and post-dredging survey of concentrations of chemicals in surface sediment in SW29 and potentially-relevant areas to the northwest of SW29. Although the currently-proposed turbidity monitoring is a useful line of evidence, it is flawed as proposed and a comparison of

[1] Barker, D. 2011. Deposition of David Barker, March 3, 2011, San Diego, California

pre- and post-dredging concentrations of COCs in surface sediment would serve as a much stronger line of evidence for evaluating the deposition of suspended footprint sediments to this area."

Please refer to response O-1-2.

O-1-4

The comment states: "2. Stated post-remedy sediment action levels are incorrect. On page 20, Geosyntec (2011) notes: "Sediment concentrations in a horizon that represents the first undisturbed depth beneath the dredge depth will be measured. COCs that will be monitored and compared to background sediment chemistry levels include copper, mercury, HPAHs, TBT, and PCBs. The background sediment chemistry levels are presented in Table 1."

This passage is incorrect. Concentrations of the COCs in surface sediment sampled immediately following dredging are to be compared to values corresponding to 120 percent of the concentrations in background sediment, as discussed on page 34-3 of the CRWQCB's September 15, 2010, version of the DTR. This passage and Table 1 of Geosyntec (2011) should be revised to reflect the approach detailed on page 34-3 of the DTR.

The San Diego Water Board Cleanup Team presumes that the comment citation of Geosyntec (2011) refers to Appendix C, the Water Quality Technical Report for the Shipyard Sediment Remediation Site, San Diego Bay, San Diego, CA. However, the comment cites a draft document, as the cited text is incomplete and incorrect, with the referenced page number and Table also being incorrect. The correct passage reads:

"As per the TCAO, sediment monitoring will occur in footprint polygons (Figure 5) and will be implemented immediately after the dredging contractor has confirmed that dredge depths within the footprint area have been achieved. Sediment concentrations in a horizon that represents the first undisturbed depth beneath the dredge depth will be measured. COCs that will be monitored and compared to background sediment chemistry levels include copper, mercury, HPAHs, TBT, and PCBs. The background sediment chemistry levels are presented in Table 2 and discussed in further detail in the Draft Technical Report for the TCAO (San Diego Water Board 2010)."

Thus, the text references the DTR for the specifics regarding the comparison to background sediment levels.

O-1-5

The comment states: "3. Recent investigations by BAE Systems do not appear to have been considered. Recent Site investigations conducted by BAE Systems (BAE) in support of their late 2010/early 2011 dry dock dredging project do not appear to have been incorporated into the draft EIR materials. During this time period, BAE conducted an investigation of surface and subsurface sediment chemistry in and adjacent to the proposed footprint area. This data is useful for multiple technical aspects of the EIR, including evaluating the likelihood that the dredged materials would be classified as hazardous waste and predicting potential impacts to water quality as a result of chemical releases from sediment. Waste characterization is a key factor in remedial cost allocation, and it is necessary to obtain a clear accounting of this remedial cost element (as well as the remainder of the remedial cost assumptions). Additionally, updated bathymetry in the BAE portion of the Site would likely improve engineering plans for the various remedial approaches. Turbidity and water quality data collected during BAE's dry dock dredging events should also be incorporated in the monitoring and mitigation plans, as they may offer a better understanding of the Site-specific performance of silt curtains and other efforts related to controlling the migration of suspended sediments."

The comment provides suggestions for incorporating recent non-remedial localized sediment investigations into technical aspects of the Draft PEIR, including the likelihood of sediment being classified as a hazardous waste. However, changes in the likelihood of the amount of hazardous wastes encountered does not warrant changes in the mitigation measures in the Draft PEIR for the assessment and handling of sediment that may be classified as hazardous waste. Furthermore, the results of the localized dredging should not be construed to represent the entire site in any capacity, as sediment sampling has shown pollutants to be variable between and among polygons. The suggestions to incorporate updated bathymetry maps and water quality data into site-specific plans do not provide adequate information to change proposed mitigation measures, as this information is more appropriately considered during project planning phases at localized areas to be dredged. In fact, the suggestion to incorporate this information into monitoring and mitigation plans is expected to occur in accordance with the plan submittal requirements in the TCAO. More specific information at this time is not necessary, as the Project Description contains sufficient detail to assess impacts, identify mitigation measures, and to provide for meaningful public review and comment. Future decisions and implementing actions following certification of the PEIR and approval of the project will be subject to subsequent environmental review pursuant to CEQA.

O-1-6

The comment states: "4. Additional engineering and feasibility detail is needed regarding the proposed remedial activity. There is a paucity of supporting information regarding technical engineering information used to derive the proposed remediation plan. For example, on page 12 of Geosyntec (2011), Geosyntec states that 'Under pier capping operations will likely be performed after sediment removal operations are fully completed.' Due to the creation of slopes adjacent to the piers (due to dredging), under-pier sediment may slough off into the adjacent dredged areas, causing a potential persistent recontamination of these areas. This likelihood should be evaluated via modeling or other engineering information, and results should be incorporated into the overall project planning and made available for review. Additionally, supporting material is needed to fully understand why hydraulic dredging of under-pier sediment was excluded as a remedial option (currently, only capping of under-pier sediment is proposed). It is possible that hydraulic dredging may address under-pier contamination issues and protect against sloughing of under-pier sediment to adjacent areas. However, these options can only be fully explored by a thorough engineering feasibility evaluation."

As specified in the TCAO and DTR, dredged areas will be evaluated for additional remediation measure based upon a number of factors, including the likelihood of recontamination due to factors such as sloughing. Where appropriate, clean sand cover may be placed in dredged areas to protect "cuts." It is unclear what information is needed that is not already provided in the Geosyntec (2011) report. The Geosyntec (2011) report states:

> "As presented in the TCAO, portions of the remedial areas (2.4 ac) are located under piers and cannot be feasibly dredged without potential significant impacts to infrastructure. Therefore, it is assumed that a clean sand cover will be spread evenly in these under pier areas identified as containing contaminated sediments. It is assumed that the final engineering plan will be designed to illustrate where the sand cover will be placed in relationship to the anticipated dredge 'cut' depths adjacent to the piers where covering will occur. It is assumed that the sand cover will not only be placed on top of the sediment under the piers, but also along the sides at an engineered slope designed to prevent lateral migration of contaminated sediment due to propeller wash, flow and tidal induced erosion. The source and type of sand required for the subaqueous cover will be presented in the final engineering plans."

Thus, it is inappropriate to assume that sloughing will occur, and that hydraulic dredging of under-pier areas thus needs to be further evaluated at this time. More specific information is not necessary, as the Project Description contains sufficient detail to assess impacts, identify mitigation measures, and to provide for meaningful public review and comment. Future decisions and implementing actions following certification of the PEIR and approval of the project will be subject to subsequent environmental review pursuant to CEQA.

O-1-7

The comment concludes the comment letter and does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-1-8

The comment is a signature page certifying the submittal of comments for this project. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

SAN DIEGO COASTKEEPER/ENVIRONMENTAL HEALTH COALITION

Letter Code: O-2

Date: July 27, 2011

O-2-1

The comment states: "San Diego Coastkeeper and Environmental Health Coalition ("Environmental Parties") have reviewed the Draft EIR for the Shipyard Sediment Cleanup. The Environmental Parties remain concerned about the inadequacies of the remedial and post-remedial monitoring plans, detailed in our comments submitted on May 26, 2011. Notwithstanding these comments, with a few additions and clarifications, the Draft Environmental Impact Report will be adequate. It is imperative that the toxic sediments—too toxic for the Ocean Dump site—be removed from the Bay as soon as possible."

This comment expresses an opinion about the project and is not a comment on the environmental analysis contained in the Draft PEIR. This comment will be included as part of the record and made available to the decision-makers prior to a final decision on the project.

O-2-2

The comment states: "The Environmental Parties submit the following comments and recommendations to ensure that the Draft EIR fully reflects the conditions and measures needed to reduce environmental impacts from the project. The Environmental Parties reserve the right to rely on other comments submitted."

The comment is introductory to other comments in the letter. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-2-3

The comment states: "I. The Draft EIR should include and adopt a new, environmentally preferable sediment barging option.

"The current proposal involves two legs of truck traffic related to the project: (1) to truck the dredge spoils to the treatment staging area and (2) to haul the treated sediment to the appropriate landfill. Any remedial option that achieves the cleanup goals while also (1) reducing the number of trucks and truck trips, (2) reducing greenhouse gas emissions, and (3) avoiding from parking impacts on local communities, should be viewed as environmentally preferable.

"The Environmental Parties request that the Draft EIR include and adopt a new option of barging the sediments bound for Otay Landfill to Staging Area 5 on the National City Marine Terminal for treatment. This option could reduce the number of trucks and truck trips, reduce greenhouse gas emissions, and avoid additional parking impacts on local communities. Northern areas of the proposed Staging Area 5 would reduce or eliminate potential impacts on the Sweetwater Marsh wildlife refuge and should be identified. No areas on the National City Marine Terminal near the parks or commercial areas should be considered for staging."

In summary, the comment expresses an opinion in support of transporting sediment by barge to Staging Area 5 at the National City Marine Terminal before transporting by truck to the Otay Landfill. This comment will be included as part of the record and made available to the decision-makers prior to a final decision on the project.

The comment indicates that the selection of Staging Area 5 and the use of a barge would reduce the number of truck trips, reduce greenhouse gas emissions, and avoid parking impacts to local communities. To clarify, the current proposal does not rely on, nor explicitly require, two phases of truck trips, as, with the exception of Staging Area 4**,** it is anticipated that the barge will be off-loaded at a staging area. Section 3.6 of the Draft PEIR states: "The project includes dredging of and/or applying a clean sand cover to the contaminated soils; vessel transport to shore; dewatering, stockpiling, and testing of dredged materials at a landside staging location; and truck transport of dredge materials to the appropriate landfill disposal facility. Each of these components is further described below."

While off-loading will likely occur into a dump truck (see Section 3.6.2 of the Draft PEIR), the truck movement is not "equivalent to a trip" as implied by the comment, as the truck will already be located at the staging area.

GHG emissions for the proposed project are disclosed in Section 4.7 of the Draft PEIR. The alternatives considered in this PEIR include:

- **Alternative 1:** No Project/No Development;
- **Alternative 2:** Confined Aquatic Disposal (CAD) Site;
- **Alternative 3:** Convair Lagoon Confined Disposal Facility (CDF); and
- **Alternative 4:** CDF with Beneficial Use of Sediments.

The No Project/No Development Alternative would not result in new emissions of GHGs, and Alternatives 2 through 4 would result in emission similar to the proposed project, as all would require the use of dredge and other equipment and tugs and/or trucks. It is anticipated that, should Staging Area 5 be selected, the sediment would be barged to the marine terminal and then trucked to a landfill after dewatering and treatment, as suggested in the comment.

No off-site truck parking will be allowed, regardless of which Staging Area is selected. All of the potential Staging Areas identified in the Draft PEIR have sufficient space for dredge treatment and staging and truck movement and parking. The San Diego Water Board will ensure that the responsible parties identified in the TCAO include the requirement that there be no off-site truck parking in the contract specifications. See also Project Refinements in Chapter 1.0 of this RTC document.

The comment further states that locating the staging activities in the northern areas of Staging Area 5 would reduce impacts to the Sweetwater marsh. The San Diego Water Board Cleanup Team concurs with this conclusion, as stated in the Draft PEIR, Mitigation Measure 4.5.10, which states “If Staging Area 5 is selected, prior to initiation of dredging and during final design, the contractor shall endeavor to restrict dewatering and treatment activities to within the western and northern portions of the staging area to the extent feasible. To the extent practicable, activities shall be conducted in locations where existing buildings obstruct sensitive habitat areas from noise sources. The staging area layout shall be submitted to the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) (and to the resource agencies, if required) for review and approval.”

The Draft PEIR provides a reasonable range of project alternatives and potential staging areas and does not select a preferred alternative or staging area. Once a project has been selected, detailed analyses will be provided in a site-specific environmental document, including any staging area(s) to be used. Suggestions pertaining to the use of Staging Area 5 described in the comment will be further considered during this process.

O-2-4

The comment states: “Similarly, the Naval Station should be evaluated as an additional staging area because it has many piers that are easily accessible by water and the Navy is a potentially responsible party. Further, Naval Station areas north of the National City Marine Terminal are good potential locations that would also support use of barges.”

Naval Base San Diego is homeport of the Pacific Fleet, consisting of 56 ships, including 46 U.S. Navy ships, two U.S. Coast Guard cutters, and various ships of the Military Sealift Command, as well as research and auxiliary vessels. Soon, the base will welcome the Navy’s newest and most advanced 21st century fleet platforms known as Littoral Combat Ships. Ashore, Naval Base San Diego is also home to more than 200 separate tenant commands and other Navy support facilities, each having specific and specialized fleet support missions. The Base is a workplace for approximately 30,000 military, civilian and contract personnel. Additionally, the base has rooms to house more than 4,000 men and women in modern apartment-like barracks. (Source: http://www.cnic.navy.mil/SanDiego/About/History/index.htm, accessed September 11, 2011.) The Naval Base is an active military installation and is the largest base of the United States Navy on the west coast of the United States. The Department of Navy has not made the facility available for the Shipyard Sediment Remediation Project and is unlikely to do so. Furthermore, availability of the site is outside the control and jurisdiction of the San Diego Water Board and the Port District. Therefore, use of Naval Base San Diego is not considered to be a viable option and was not analyzed further in the Draft PEIR.

O-2-5

The comment states: "II. New relevant studies should be included in the Draft EIR.

"The State Water Resources Control Board Surface Water Ambient Monitoring Program's SWAMP) 2009 Coast Survey, 'Contaminants in Fish from the California Coast' (Attached as Exhibit A) should be included in the Draft EIR. The Coast Survey is California's largest-ever statewide survey of contaminants in sport fish from coastal locations, and it evaluates the extent of chemical contamination in sport fish from California's coastal waters. Results from the first year of the two-year survey reveal that San Diego Bay stands out as having elevated concentrations of mercury and PCBs.[1] The survey sets further data collection and analysis of contamination levels in San Diego Bay as a high priority."[2]

The provided studies are included in Appendix C of this RTC document, and are therefore included in the Final PEIR for the project. They will be made available for review and consideration by the decision-makers. While the information included in these studies is of value, inclusion of this information in the Final PEIR does not change the impact conclusions of the Draft PEIR.

O-2-6

The comment states: "Likewise, the recent 'Final Report to the Port of San Diego Chemical Analysis of threatened and Endangered Species in San Diego: The San Diego Bay Trophic Transfer Project,' by Dr. Rebecca Lewison (Attached as Exhibit B) should be included in the Draft EIR. This study demonstrated that turtles, a long-lived species in the Bay, have had both chronic and acute exposures to toxic chemicals linked to bay sediment contamination through their food sources.[3]

"These studies should be included in the Draft EIR because they further demonstrate the adverse effects of sediment contamination on wildlife in the bay."

Inclusion of this information in the Final PEIR does not change the impact conclusions of the Draft PEIR. Please see response to comment O-2-5.

O-2-7

The comment states: "III. The Draft EIR fails to assess and address impacts of filling the Convair Lagoon, which should not be considered a viable alternative.

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1 J.A. Davis et al., Contaminants in Fish from the California Coast, 2009: Summary Report on Year One of a Two-Year Screening Survey, A Report of the Surface Water Ambient Monitoring Program (SWAMP), California State Water Resources Control Board, Sacramento, CA (2011).

2 Ibid.

3 Lewison et al., Chemical Analysis of Threatened and Endangered Species in San Diego (2011).

"The Draft EIR fails to adequately address the impacts of filling Convair Lagoon. When originally conceived and permitted, the existing underwater cap was to be replanted with eelgrass and restored as a habitat. If the lagoon is filled, the loss of habitat area and of open water would need to be mitigated. However, two projects listed as potentials (intake/ discharge channels of the power plant and fixing a failed previous mitigation) would not be appropriate and would, in fact, constitute double-dipping. Thus, these two projects should not be considered as mitigation options. The Port is very limited on mitigation options in the bay, so a major effort must be made to find adequate and appropriate mitigation for this option."

The Convair Lagoon Alternative is analyzed in detail in Chapter 5 of the Draft PEIR. Clarifications have been made to the text of this chapter, which is reprinted in Appendix A, Errata, of this RTC document.

To clarify, the Draft PEIR includes the Convair Lagoon confined disposal facility as a project alternative for consideration consistent with the requirements of CEQA. The Draft PEIR does not choose a preferred alternative. The Draft PEIR also clearly states that creation of a confined disposal facility would require significant levels of open water and eelgrass creation mitigation, and though potential sites are discussed, no specific site is identified. The evaluation of potential mitigation sites will be conducted by the San Diego Water Board and the Unified Port of San Diego through consultation with the appropriate regulatory permitting process, which is also explained in the Draft PEIR. The Convair Lagoon Alternative was not identified as an Environmentally Superior Alternative to the proposed project and would require mitigation measures in addition to those required for the proposed project in multiple areas, most significantly including water quality and biological resources.

O-2-8

The comment states: "IV. New mitigation measures must be added to the Draft EIR, and current measures must be strengthened.

"Mitigation measures must be added to the Draft EIR. As written, the Draft EIR fails to provide adequate and appropriate mitigation with respect to impacts on the community, air quality, and on endangered species and habitats.

a. The staging areas will adversely affect the community and must be mitigated.

Displaced parking is already a major issue in the community, thus any parking impacts must be mitigated. Staging Areas 1-4, if used, will have significant impacts on the entire community, and Staging Area 5, if used, will have impacts on areas of west Old Town National City. Mitigation fees to offset impacts should be paid to the Ports Capital Improvement Fund for projects in Barrio Logan and Old Town National city in proportion to the amount of traffic and impacts that accrue in those neighborhoods."

The comment asserts that the Proposed Project would result in significant parking impacts to the community and that mitigation fees are warranted. The Draft PEIR found that the Proposed Project would not result in significant parking impacts as a result of employee parking limitations with incorporation of Mitigation Measure 4.1.3. Mitigation Measure 4.1.3 requires that, should one or more of Staging Areas 1 through 4 be selected, the San Diego Water Board, will ensure that the responsible parties identified in the TCAO, in consultation with the Port District, the shipyards, and the City of San Diego, would prepare a Parking Management Plan (PMP) to identify appropriate substitute parking areas, shuttles, and commuter routes, as necessary, to meet the need created by the short-term loss of employee parking spaces. Mitigation Measure 4.1.3 is included to ensure that the potential short-term parking loss impact during the dredge activity is reduced to less than significant. No additional mitigation, including mitigation fees, is required.

No off-site truck parking will be allowed, regardless of which Staging Area is selected. All of the potential Staging Areas identified in the Draft PEIR have sufficient space for dredge treatment and staging and truck movement and parking. The San Diego Water Board will ensure that the responsible parties identified in the TCAO include a requirement that there be no off-site truck parking in the contract specifications. See also Project Refinements in Chapter 1 of this RTC document. CEQA Guidelines section 15126.4 (a) (3) states that "mitigation measures are not required for effects which are not found to be significant." A discussion of mitigation measures is required for significant environmental effects only. There are no significant effects related to parking impacts, and no mitigation measures, including mitigation fees, are warranted relative to truck parking.

Furthermore, Mitigation Measure 4.1.1 requires that project-related truck traffic is routed on Harbor Drive (southbound) to the Civic Center Drive access to I-5, thereby avoiding impacts to Barrio Logan. Traffic impacts for Staging Area 5 were determined to be less than significant. See Section 4.1 of the Draft PEIR for more information.

The Draft PEIR provides a reasonable range of project alternatives and potential staging areas and does not select a preferred alternative or staging area. Once a project has been selected, detailed analyses will be provided in a site-specific environmental document, including any staging area(s) to be used.

The comment's references to air quality and biological impacts are introductory to comments that follow later in the letter. Please see Responses to Comments O-2-13 through O-2-15, below.

O-2-9

The comment states: "Further, trucks parked in neighborhoods while waiting for pick-ups and drop-offs would negatively impact the community. The Draft EIR should designate a truck staging area to address this issue."

No off-site truck parking will be allowed, regardless of which Staging Area is selected. All of the potential Staging Areas identified in the Draft PEIR have sufficient space for dredge treatment and staging and truck movement and parking. The San Diego Water Board will ensure that the responsible parties identified in the TCAO include a requirement that there be no off-site truck parking in the contract specifications. See also Project Refinements in Chapter 1 of this RTC document. See also responses to comments O-2-3 and O-2-8.

O-2-10

The comment states: "b. Current mitigation measures for air quality impacts must be strengthened to ensure that the cleanup protects the environment and does not contribute to existing air pollution.

Mitigation Measures 4.6.8 and 4.6.9 should be strengthened to require all that trucks used be hybrid or cleaner alternative fuel trucks and tugs. Further, electric powered dredging equipment should be required for all dredging. For a project of this magnitude and duration, it will be cost- effective to utilize this new technology."

Mitigation Measure 4.6.8 requires that all diesel-powered equipment used are retrofitted with after-treatment products (e.g., engine catalysts) to the extent that they are readily available in the San Diego Air Basin (SDAB). Mitigation Measure 4.6.9 requires that all heavy-duty diesel-powered equipment operating and refueling at the project site use low oxides of nitrogen (NO_X) diesel fuel to the extent that it is readily available and cost effective (up to 125 percent of the cost of ARB diesel) in the SDAB. (This does not apply to diesel-powered trucks traveling to and from the project site.)

The comment suggests that all trucks used for the project be hybrid or cleaner alternative fuel trucks and tugs, and that electric powered dredging equipment should be required for all dredging.

The purpose of describing mitigation measures in an EIR is to identify mitigation measures that could minimize significant adverse impacts. A mitigation measure may be rejected as infeasible if it is "[in]capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors" (Public Resources Code Section 21061.1). Legal or other factors, such as providing employment opportunities, may also be considered in making a finding of infeasibility. See Public Resources Code section 21081; see also CEQA Guidelines section 15091 (a)(3).

Hybrid and other alternative fuel trucks and tugs, as well as electric dredge equipment currently have limited availability. For example, the San Diego Water Board Cleanup Team is aware of one zero-emission truck delivered for an 18-month pilot program in the Port of Long Beach/Port of Los Angeles area. There is no information to support a conclusion that this or other such zero-emission trucks are readily available in the SDAB. Also, there is no evidence to support a conclusion that the use of electric dredge equipment would be either available or practical for use in the San Diego Bay. Small, electric remote dredge equipment with a hull construction on 2 foam-filled pontoons can be used in small, enclosed water bodies, but are not appropriate for the nature and scale of the proposed project in the San Diego Bay. (www.lwtpithog.com/Specifications/remote_control_dredge_PHE40HP.htm, accessed September 12, 2011.) If non-remote control dredge equipment were to be used, it would need to be cabled to a source of electricity. Use of an electric cable to power equipment operating in the actively navigated San Diego Bay is neither practical nor advisable.

Since these types of equipment are not widely available and/or practical, a requirement to use zero-emission trucks and/or dredging equipment would unduly hinder the timing of the remediation implementation. The mitigation measures identify the conditions under which these considerations would be implemented if they are readily available in the SDAB for both retrofitted equipment and cleaner fuel, and, if they are readily available, that they also be cost effective.

The San Diego Water Board has been working on the development and issuance of the TCAO for discharges of metals and other pollutant wastes to San Diego Bay marine sediment and waters at the Shipyard Sediment Site for approximately 10 years. The Cleanup Team has identified elevated levels of pollutants in the San Diego Bay bottom sediments adjacent to NASSCO and BAE Systems shipyards. The concentrations of these pollutants cause or threaten to cause a condition of pollution that harms aquatic life and beneficial uses designated for San Diego Bay. The concentrations of these pollutants also present aquatic-dependent wildlife and human health risks from exposure to pollutants through the food chain attributable to the contaminated sediment.

The additional mitigation requirements cited in the comment would inappropriately limit the project to types of trucks and equipment that are not widely available and that could add an indefinite amount of time to the project schedule. The San Diego Water Board Cleanup Team has concluded that the suggested mitigation would result in delaying the full implementation of the project cleanup plan that is intended to protect the quality of the waters of San Diego Bay for use and enjoyment by the people of the state, and that such delay is a factor that is considered in making the finding of infeasibility. Since the suggested mitigation could not be accomplished in a successful manner within a reasonable period of time, it is considered to be infeasible mitigation under CEQA.

Furthermore, Mitigation Measure 4.6.10 requires that alternative fuel construction equipment (i.e., compressed natural gas, liquid petroleum gas, and unleaded gasoline) are utilized to the extent that the equipment is readily available and cost effective in the SDAB. Therefore, in addition to being considered infeasible, the portion of the suggested mitigation related to alternatively fueled equipment is also not adopted because it is similar to mitigation measures already incorporated into the project.

O-2-11

The comment states: “The Environmental Parties suggest that Mitigation Measure 4.6.10 should be required without limitation or, at a minimum, the Draft EIR should define what “cost-effective” means. Without this requirement, the dischargers will not use hybrid or cleaner alternative fuel trucks and tugs. Further, for air emissions that cannot be eliminated, the dischargers must acquire NO_X and ozone offsets for the emissions from the project, as the area is currently in “non-attainment” for these air pollutants.”

See Response to Comment O-2-10 regarding the fact that some of the alternative fuel construction and transportation equipment are not readily available, and that a requirement to use such fuels and/or equipment would adversely impact the project implementation schedule and delay the achievement of the project’s environmental clean-up objectives.

It is commonly understood that a cost effectiveness evaluation is the examination of the cost and the outcomes of the alternative means of accomplishing an objective, in order to select the one with the highest effectiveness relative to its cost. Because the alternative fuel construction and transportation equipment are not readily available, their cost effectiveness is a moot issue. Thus the Final PEIR need not define “cost-effective.”

O-2-12

The comment states: “In addition to reducing air pollution in local communities, a requirement for hybrid tugs and trucks would also help reduce the impacts on global climate change. This option is clearly feasible, as the Ports of Los Angeles and Long Beach are using a zero-emission heavy-duty rig that runs on electric batteries powered by a hydrogen fuel cell to transport cargo between the ports and Inland Empire warehouses and distribution centers. See *Los Angeles Times*, “Seaport complex takes delivery of zero-emission hauling truck,” July 23, 2011, Attached as Exhibit C.”

The referenced article identifies one zero-emission truck in the Port of Long Beach/Port of Los Angeles area, and does not provide sufficient information to support a conclusion that such alternative fuel trucks are readily available in the San Diego Air Basin. The presented article, dated July 23, 2011, discusses one truck delivered for an 18-month pilot program for the Ports of Los Angeles and Long Beach. The truck of discussion is for hauling cargo containers and is not a barge or truck fitted with containment for transporting contaminated sediment. Please see response to comment O-2-10 above. The provided article is included in Appendix C of this RTC document, and is therefore included in the Final PEIR for the project. It will be made available for review and consideration by the decision-makers. Inclusion of this information in the Final EIR does not change the conclusions of the Draft PEIR.

O-2-13

The comment states: “c. The Draft EIR must adopt more stringent measures to mitigate impacts on endangered species and of habitat loss in the bay.

“The Draft EIR should recommend that dredging should not be allowed to occur during the California Least Tern nesting season. The Tern colonies in the region are already suffering under existing pressures, such as the Big Bay fireworks show and budget cuts reducing predator management. The Cleanup would place additional pressure on the already strained Tern population. Thus, if dredging is allowed during nesting season, mitigation of impacts to the Terns must be required.”

The Draft PEIR clearly states that there are two scheduling options for the remediation, with one option avoiding the tern nesting season (see section 3.6). As the section states, “The preferred schedule will be determined during the final design phase. However, both schedule options are included in the technical study analyses and the Draft PEIR.”

Future decisions and implementing actions following certification of the PEIR and approval of the project will be subject to subsequent environmental review pursuant to CEQA. The PEIR, once certified, may be used as an environmental clearance baseline against which to evaluate future site-specific implementation approvals and permits for implementation of the proposed project.” Thus, the “tiering” process and need for further environmental review will be specific to the selection of the dewatering and treatment site(s) for the dredged materials.

The Draft PEIR evaluates a reasonable range of project alternatives and potential staging areas, and does not select a project or staging area. Once a preferred alternative and Staging Area have been selected, detailed analyses will be provided in a site-specific environmental document, including any staging area(s) to be used and potential impacts on California least tern nesting colonies associated with those staging areas. Lastly, the regulatory permitting process under federal law will require dredging to be coordinated with the USFWS. It is noted in the Draft PEIR (Table 4.5-3) that the likelihood that California least terns will be nesting adjacent to the dredging area or at the Staging Areas under consideration is considered to be low. The discussion of potential project impacts to this species begins on page 4.5-51 in the Draft PEIR. As noted therein, the potential for impacts to California least tern resulting from the project are unlikely to be significant, but may be cumulatively significant. Mitigation Measure 4.5.9 and agency consultation prior to project implementation are intended to minimize and avoid impacts to this species.

O-2-14

The comment states: “The economic analyses included in the Draft Technical Report assume that dredging will not occur during the California Least Tern nesting season. If this limitation is not required, the Cleanup Team must re-calculate dredging costs to reflect this changed assumption."

The comment on the economic analysis is not applicable to the Draft PEIR, but rather is a comment on the Draft Technical Report on the TCAO. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary. However, for informational purposes, it is noted that the $58 million estimated cost of dredging presented in the DTR is part of the "total values" analysis required by Resolution No. 92-49 in order to establish alternative cleanup levels greater than background (see Response to Comments Report on the TCAO and DTR, Response No. 31-1). If the dredging is done continuously over 12.5 months instead of in three 7-month seasons, then only one mobilization and one demobilization would occur instead of three. The estimated cost of one mobilization and demobilization is $300,000 (see DTR Table 32-26). Therefore, if the dredging is done in one 12.5-month period, the cost of the dredging project would be reduced by $600,000. This reduction represents a 1 percent change in the estimated cost of the dredging project and is not significant.

O-2-15

The comment states: "Further, the Draft EIR should require mitigation if any open water or bay bottom is permanently lost to fills or confined disposal facilities."

This comment pertains to Chapter 5, Section 5.10.4 of the Draft PEIR. See Appendix A of this RTC document for an updated Chapter 5.0. The mitigation measures included for loss of open water impacts associated with the Convair Lagoon Alternative include:

Mitigation Measure 5.10.4.4: **Jurisdictional Waters and San Diego Bay Surface Loss.** New bay habitat shall be created within an alternative location of the San Diego Bay via excavation of shoreline and creation of tidal influence in previously non-tidal areas. The mitigation ratio for the loss of 8.5 acres of intertidal and subtidal habitats would occur at a 1:1 ratio. The coastal salt marsh habitat shall be mitigated at a 4:1 ratio (i.e., creation of 0.44 acres of salt marsh habitat for 0.11 acres impact). This shall include:

a. The removal and disposal or reuse of historic fills;

b. Grading the site to a desired hydrologic condition of channels, subtidal basins, and intertidal flats in order to support desired compensatory habitat; and

c. Planting pilot vegetation plots to allow for natural expansion of marshland vegetation.

The creation of new bay surface water habitat may occur in one or more of the following locations, as approved by the resource agencies NMFS, USFWS, EPA, CDFG and ACOE: 1) Grand Caribe Isle in the Coronado Cays; 2) D Street Fill just across the Sweetwater Channel from the National City Marine Terminal; 3) the South Bay Power Plant; 4) the Salt Works; and/or; 5) Pond 20 adjacent to the Salt Works. The approved mitigation site shall be lowered from upland elevations to create intertidal and subtidal habitats, except for the South Bay Power Plant, which would require filling the existing intake and discharge channels of the power plant to create tidal lands. The mitigation ratio for intertidal and subtidal habitats would occur at a 1:1 ratio; however, the coastal salt marsh habitat would have to be mitigated at a 4:1 ratio. These ratios would require the replacement of approximately 3.9 acres of intertidal habitat, 4.49 acres of shallow subtidal habitat, 0.31 acres of moderately deep and deep subtidal habitat (which would most likely be replaced as intertidal habitat due to habitat value) and 0.44 acres of coastal salt marsh habitat. Brief descriptions of the potential mitigation locations for jurisdictional and San Diego Bay surface loss impacts are described Table 5-26. The San Diego Water Board shall verify implementation of this measure.

Draft PEIR Table 5-26: Potential Mitigation Sites for San Diego Bay Surface Water Loss

Potential Surface Bay Loss Mitigation Site	Description
Grand Caribe Isle	The Grand Caribe Isle is located on South Grand Caribe Isle in the Coronado Cays. The South Grand Caribe Isle site is a disturbed upland area that would be regraded to accommodate wetland, intertidal marsh, and subtidal habitat. This area is located adjacent to a small passive use native plant park and has recently been used as a borrow site for the former Campbell Shipyard sediment remediation project sediment sand cap. The on-site soil consists of loamy sand from marine deposits. The Bay surrounds the site, with the peninsular connection being isolated from other native upland habitats by the Coronado Cays residential development. The biological resources on the site are dominated by common, widely distributed species, many of which are representative of disturbed lands. Species well represented on the site include salt heliotrope (*Heliotropium curvassavicum*), slender-leaved iceplant (*Mesembryanthemum nodiflorum*), garland (*Chrysanthemum coronarium*), and red-stem filaree (*Erodium cicutarium*).

Draft PEIR Table 5-26: Potential Mitigation Sites for San Diego Bay Surface Water Loss

Potential Surface Bay Loss Mitigation Site	Description
D Street Fill	D Street Fill is located immediately south of the National City Marine Terminal (NCMT) across the Sweetwater River channel. The site is routinely cleared/disked in an effort to provide nesting habitat for the California least tern (*Sterna antillarum browni*). As a result, the area is mostly devoid of vegetation. Plant species that occur are limited to native and non-native species that are typical of disturbed sandy soils found in the area. These species include opportunistic native species such as woolly lotus (*Lotus heermannii* var. *heermannii*), salt heliotrope, beach evening primrose (*Camissonia cheiranthifolia* ssp. *suffruticosa*), coyote brush (*Baccharis pilularis*), coast woollyheads (*Nemacaulis denudata* var. *dunudata*), and fragrant everlasting (*Pseudognaphalium beneolens*). Non-native plant species include Hottentot-fig (*Carpobrotus edulis*), slender-leaved iceplant, garland, pineapple weed (*Amblyopappus pusillus*), and red-stem filaree. Bird species that utilize this area for foraging and/or nesting include horned lark (*Eremophila alpestris*); Northern rough-winged swallow (*Stelgidopteryx serripennis*); and during the winter, American pipit (*Anthus rubescens*) (pers.com Robert Patton). The gull-billed tern (*Sterna nilotica*), a species that predates on California least tern young, is also known to forage over the site.
Salt Works	Marsh lands around the mouth of the Otay River in the shallow, south end of San Diego Bay were converted to salt evaporation ponds in the late 1800s. Over the past century, various internal berms have been constructed, repaired, and removed by operational changes and flooding. These changes have resulted in changing topographic conditions that have resulted in a number of distinct pond cells. The salt ponds consist of shallow, open water cells of different salinity levels interspersed with mudflats, dry dikes, and salt marsh. The salt pond levees consist primarily of unvegetated uplands. The lack of vegetation on many of the levee tops is the result of ongoing maintenance activities associated with the salt operation, as well as the high salinities that exist in the vicinity of the levees. The nature of the salt extraction process has facilitated use of this artificial habitat by many shorebirds, sea birds, and waterfowl. It represents one of the few large feeding, roosting, and nesting areas remaining along the urbanized southern California coast.
Pond 20	The Pond 20 site, located south of the Salt Works is defined by internal dikes that include three smaller pond cells (Ponds 20A, 20B, and 20C). Pond 20 is isolated from tributary fresh or saltwater surface input and experiences occasional storm runoff from the internal pond basin and a roadway surface drain from Palm Avenue. Seasonally, water levels in the pond fluctuate significantly and waters are highly saline due both to the pond's history as a salt concentrator and the continued closed system evaporative processes occurring in the pond today. Years of drought and heavy rainfall influence the levels of standing water in the pond and the rates of fluctuation of water surface levels. At present, limited standing water is found along the lower-lying "channels" that parallel the dike and generally below a nearly complete salt crust. These deeper channels are believed to be borrow areas for the reconstruction and repair of the pond containment dikes. These channels also historically enhanced water collection for pumped transfers within the salt pond system.

O-2-16

The comment concludes the comment letter. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

NASSCO

Letter Code: O-3

Date:

O-3-1

The comment states: "Designated Party National Steel and Shipbuilding Company ('NASSCO') submits the following comments regarding the Draft Environmental Impact Report ('DEIR') for the Shipyard Sediment Remediation Project ('Project'), State Clearing House Number 2009111098, publicly released by the California Regional Water Quality Control Board, San Diego Region ('Regional Board') on June 16, 2011. NASSCO is also concurrently submitting under separate cover additional comments on the DEIR prepared by Rick Bodishbaugh, Tom Ginn and Gary Brugger of Exponent, and Michael Whelan and David Templeton of Anchor QEA, which are intended to supplement this letter.

Although we have numerous concerns with the analysis in the DEIR, NASSCO's key concerns are summarized as follows:"

The comment is introductory to other comments in the letter. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-2

The comment states: "Monitored Natural Attenuation: The DEIR fails to mention (much less evaluate) a monitored natural attenuation alternative to the Project, even though such an alternative was selected as the preferred remedy in the Detailed Sediment Investigation underlying Tentative Cleanup and Abatement Order R9-2011-0001 ('TCAO') and the associated Draft Technical Report ('DTR'), and notwithstanding that substantial evidence demonstrates that the monitored natural attenuation alternative will avoid all of the proposed Project's significant and potentially significant environmental impacts, obviate the need for the Project's detailed, costly and uncertain mitigation measures, and feasibly accomplish the Project Objectives in a reasonable period of time."

Section 15126.6(a) of the CEQA Guidelines requires that:

> "An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation. An EIR is not required to consider alternatives that are infeasible. The Lead Agency is responsible for selecting a range of project

> alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason."

Consistent with the CEQA Guidelines criteria for selection of project alternatives, the following four alternatives have been determined to represent a reasonable range of alternatives that have the potential to feasibly attain most of the basic objectives of the project but that may avoid or substantially lessen any of the significant impacts of the project. Therefore, the alternatives considered in this PEIR include the following:

- **Alternative 1:** No Project/No Development;
- **Alternative 2:** Confined Aquatic Disposal (CAD) Site;
- **Alternative 3:** Convair Lagoon Confined Disposal Facility (CDF); and
- **Alternative 4:** CDF with Beneficial Use of Sediments.

The Draft PEIR does not improperly omit the consideration of monitored natural attenuation as a project alternative under CEQA Guidelines (§ 15126.6). The comment cites CEQA Guidelines at 15126.6(a) regarding alternatives and the selection of alternatives for the proposed project, arguing that an "*an in-depth discussion* is required of any alternative that is *at least potentially feasible*. Center for Biological Diversity, 185 Cal. App. 4th at 883." Further, the comment states that "an EIR is legally defective if it fails to include a reasonable explanation for excluding consideration of an alternative that would reduce environmental impacts and achieve most project objectives. Center for Biological Diversity, 185 Cal. App. 4th at 883." However, these citations are taken out of context, as the referenced cases discuss the level of evaluation necessary for alternatives that have been identified that would attain most of the project objectives. The cited CEQA Guidelines at 15126.6(a) state:

> (a) Alternatives to the Proposed Project. An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decisionmaking and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason. (*Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553 and *Laurel Heights Improvement Association v. Regents of the University of California* (1988) 47 Cal. 3d 376).

Furthermore, the rule of reason in CEQA Guidelines at 15126.6(f) states:

> (f) Rule of reason. The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making.

The Draft PEIR was not, as the comment states, required to evaluate monitored natural attenuation as an alternative to the project, because monitored natural attenuation fails to achieve the majority of the project objectives, as identified in the Draft PEIR:

> The primary goal of the project is to improve water quality in San Diego Bay, consistent with the provisions of the Tentative Cleanup and Abatement Order (CAO). The specific project objectives are:
>
> - Protect the quality of the waters of San Diego Bay for use and enjoyment by the people of the state by executing a shipyard sediment cleanup project consistent with the provisions of TCAO No. R9-2011-0001;
> - Attain cleanup levels as included in the TCAO No. R9-2011-0001 (judged to be technologically and economically feasible as defined in section 2550.4 of CCR Title 23, pursuant to Resolution No. 92-49);
> - Remediate areas identified in Attachment 2 of TCAO No. R9-2011-0001;
> - Minimize adverse effects to aquatic life beneficial uses, including Estuarine Habitat (EST), Marine Habitat (MAR), and Migration of Aquatic Organisms (MIGR);
> - Minimize adverse effects to aquatic-dependent wildlife beneficial uses, including Wildlife Habitat (WILD), Preservation of Biological Habitats of Special Significance (BIOL), and Rare, Threatened, or Endangered Species (RARE);
> - Minimize adverse effects to human health beneficial uses, including Contact Water Recreation (REC-1), Non-contact Water Recreation (REC-2), Shellfish Harvesting (SHELL), and Commercial and Sport Fishing (COMM);
> - Implement a cleanup plan that will have long-term effectiveness;
> - Minimize adverse effects to the natural and built environment;
> - Avoid or minimize adverse impacts to residential areas;
> - Result in no long-term loss of use of shipyard and other San Diego Bay-dependent facilities; and

- Minimize short-term loss of use of shipyard and other San Diego Bay-dependent facilities.

Monitored natural attenuation (MNA) alone is not sufficient to meet Draft TCAO remediation goals in a reasonable time frame or to ensure protection of beneficial uses over the long term. Further, monitored natural attenuation would result in an adverse impact to aquatic life, aquatic dependent wildlife, and human health-related beneficial uses over an extended and indefinite time period. Allowing beneficial uses at the Site to remain impaired for years is inconsistent with the cleanup goals and objectives in the Tentative TCAO for the Shipyard Sediment Site, could not be considered "implementing" the San Diego Region's Basin Plan, and is not a way to achieve cleanup goals and objectives within a reasonable time frame. A detailed discussion of the deficiencies of Monitored Natural Attenuation as the sole cleanup remedy relied upon to attain TCAO cleanup objectives is contained in Responses 1.1, 31.1, and 32.1 in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D.

Monitored natural attenuation would only meet the last three short-term project objectives simply by not conducting the actual dredging activities. This is acknowledged by the comment, which states the "alternative will avoid all of the Project's significant environmental impacts to air quality, as well as its potentially significant effects to biological resources, water quality, hazardous materials and traffic, all of which are tied specifically to dredging."

Thus, in consideration of the project objectives, the San Diego Water Board did not evaluate or consider monitored natural attenuation as a reasonable alternative. Therefore, its inclusion as an alternative is not necessary to foster meaningful public participation and informed decision-making regarding the proposed project. Additionally, CEQA "does not require that every conceivable alternative be stated in the [EIR] nor that the alternatives that are stated be described in every possible detail … [w]hat is required is that the EIR give reasonable consideration to alternatives in light of the nature of the project" (see City of Rancho Palos Verdes, supra, 59 Cal. App. 3d at page 892). Furthermore, "CEQA establishes no categorical legal imperative as to the scope of alternatives to be analyzed in an EIR. Each case must be evaluated on its own facts, which in turn must be reviewed in light of the statutory purpose" (Goleta II, supra, 52 Cal. 3d at p. 566; *Mann v. Community Redevelopment Agency* (2d Dist. 1991) 223 Cal. App. 3d 1143 [285 Cal. Rptr. 9]; *Save San Francisco Bay Association v. San Francisco Bay Conservation and Dev elopement Commission* (1st Dist. 19920 10 Cal. App. 4th 908, 919 [13 Cal. Rptr. 2d117].

Finally, it is noted that natural attenuation is included in the project as reflected in the TCAO. Chapter 3.0 of the Draft PEIR states that remedial actions may include dredging, application of clean sand cover, and/or natural recovery depending upon a number of factors, including levels of contamination in the sediment and site accessibility. The proposed dredge area is approximately 11 percent of the total area of the Shipyard Sediment Site and most of the areas outside the proposed dredge area, approximately 89 percent of the Site, have several primary and secondary chemicals of concern (COCs) above background levels. Therefore, if natural attenuation is occurring, it will serve to reduce the pollutant levels in those areas not slated for active remediation by dredging.

O-3-3

The comment pertains to stormwater discharges and states: "Recontamination from Stormwater: The DEIR does not disclose the past and continuing discharges of urban runoff from Chollas Creek and other sources to the Shipyard Sediment Site ('Site'), even though the TCAO and DTR make clear that these discharges have contributed pollutants to sediments at the Site. This omission is compounded by the DEIR's failure to evaluate reasonably foreseeable impacts to the Site from recontamination, which would likely occur after the Project's contemplated dredging is completed given that stormwater discharges to the Site (unrelated to NASSCO) are uncontrolled."

In accordance with the requirements of CEQA, an EIR must identify and focus on the significant environmental effects of the proposed project. Because the purpose of an EIR is to assess the project's effects on the existing environment, an EIR need not resolve existing environmental problems that will not be made worse by the project. For example, in *Watsonville Pilots Association versus City of Watsonville* (2010), the court rejected a claim that that the EIR for a new General Plan must resolve an existing groundwater overdraft problem. The same approach would apply to the commenter's suggestion that the EIR for the remedial dredging project must resolve a surface stormwater discharge concern. In summary, the purpose of an EIR is to disclose the potential impacts of a proposed project compared to the existing conditions. It is not the purpose of a DEIR to mitigate the existing conditions. The San Diego Water Board is of the opinion that the removal of 143,400 cubic yards (cy) of contaminated marine sediment from the San Diego Bay will, in fact, further the objectives of the project to attain cleanup levels as included in the TCAO No. R9-2011-0001 and protect the quality of the waters of San Diego Bay for use and enjoyment by the people of the state. A detailed discussion on the basis for the San Diego Water Board Cleanup Team's conclusion that cleanup pursuant to the TCAO can proceed while source control efforts are underway is contained in Response 4.1 in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D.

O-3-4

The comment states: "Hypothetical Baseline: The DEIR states without analysis that existing sediment quality at the Site adversely impacts beneficial uses to aquatic life, aquatic-dependent wildlife and human health. But these statements are based on extremely conservative theoretical assumptions used to support the DTR's analysis, and have no relationship to the actual, existing conditions at the Site, as is mandatory for the 'baseline' under the California Environmental Quality Act ('CEQA')."

The San Diego Water Board has been working on the development and issuance of the TCAO for discharges of metals and other pollutant wastes to San Diego Bay marine sediment and waters at the Shipyard Sediment Site for approximately 10 years. The San Diego Water Board has identified elevated levels of pollutants in the San Diego Bay bottom sediments adjacent to NASSCO and BAE Systems shipyards. The concentrations of these pollutants cause or threaten to cause a condition of pollution that harms aquatic life and beneficial uses designated for San Diego Bay. The concentrations of these pollutants also present aquatic-dependent wildlife and human health risks from exposure to pollutants through the food chain attributable to the contaminated sediment. The San Diego Water Board's statutory duty to ensure restoration and enhancement of beneficial uses under Division 7 of the Water Code *demands* that the San Diego Water Board make reasonably conservative and environmentally protective assumptions about exposure, consumption, and risk in determining potential effects to beneficial uses from the pollutants accumulated in the sediment. A detailed discussion on the statutory and technical basis supporting the San Diego Water Board Cleanup Team's conservative exposure parameter assumptions used in the aquatic dependent wildlife and human health risk assessments is contained in Responses 24.1and 28.1, respectively, in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D.

In light of the history of studies, including sampling and other analyses used to prepare the DTR and TCAO, the San Diego Water Board concludes that the information contained in the DTR more than adequately and appropriately characterizes the existing sediment quality for the purpose of the Draft PEIR.

O-3-5

The comment states that: "D. The DEIR Provides No Support For Its Assumption That 15% of the Sediment Will Be Classified as 'Hazardous" Material'

"The DEIR assumes that 15% of the sediment to be dredged under the proposed Project will be classified as 'hazardous' and require transport to a Class I hazardous waste facility. *E.g.*, DEIR, at 4.1-12. This is presented as a 'worst-case' scenario. *Id.* The DEIR does not provide any support for this assumption, however, and therefore must be revised to inform the public as to the basis of the assumption. If none of the dredged sediment is 'hazardous,' that would upset the stated rationale for incurring the environmental impacts and other costs associated with the proposed plan to dredge 143,000 cubic yards of sediment from the Bay. If, after dredging, more than 15% of the material is determined to be 'hazardous,' this would disturb the remaining environmental impact analyses for a variety of impact areas, including but not limited to impacts associated with truck trips required to transport the material to a hazardous waste facility.

"The DEIR's assumption regarding the amount of sediment that will qualify as 'hazardous' is relied upon and affects all environmental impact areas that were assessed, so it is particularly important that the DEIR provide support for that assumption; or, if there is no support, explain how each impact area will be affected if the assumption proves to be incorrect."

The Draft PEIR states as follows:

> "Once the dredge materials have been dried and tested, they will be loaded onto trucks for disposal at an approved landfill. For purposes of this project, it is assumed that 85 percent of the material will be transported from the staging area to Otay Landfill, approximately 15 miles southeast of the Shipyard Sediment Site. Although the sediment is not known to be classified as California hazardous material, it will be tested upon removal and prior to disposal. It is assumed for the purposes of this DPEIR that up to 15 percent of the material will require transport to a hazardous waste facility (a Class I facility), which will most likely be the Kettleman Hills Landfill in Kings County, California, near Bakersfield. Based on the excavation quantity of 143,400 cubic yards (cy) and accounting for an additional 15 percent of bulk material due to the dewatering and treatment process, it is estimated that up to 250 truck trips per week could be required over an approximately 12.5-month period to remove the material. These estimates are a worst-case scenario and will be finalized during the design phase."

The 15 percent is an estimate based on available information and the collective consideration of the San Diego Water Board staff and a representative of the shipyards, as reflected in a discussion held at on an on-site meeting on December 22, 2010. More specific information is not necessary, as the project description is appropriately described in sufficient detail to assess impacts, identify mitigation measures, and to provide for meaningful public review and comment. Future decisions and implementing actions following certification of the PEIR and approval of the project will be subject to subsequent environmental review pursuant to CEQA. It is further noted that 1) The comment does not provide evidence that contradicts this estimate, and 2) the California Department of Toxic Substances Control reviewed the Draft PEIR, submitted comments, and had no comments regarding this estimation of hazardous material.

O-3-6

The comment states: "Proposed Mitigation Is Infeasible: The DEIR introduces new mitigation requirements that were not evaluated in the TCAO/DTR's economic feasibility analysis, and which will add an estimated $11.8 to $18.3 million to the costs of remediating the Site. Because these measures were not evaluated under State Water Resources Control Board Resolution No. 92-49, Polices and Procedures for Investigation and Cleanup and

Abatement of Discharges Under Water Code section 13304 ('Resolution 92-49'), or California Water Code sections 13267 and 13307, and in any event will not pass muster under such analysis to the extent that it is conducted, the Regional Board lacks authority to impose these measures under the Porter Cologne Act and they are thus 'legally infeasible' under CEQA. The additional costs also render certain of the measures, and implementation of the proposed Project as a whole, economically infeasible under CEQA."

The San Diego Water Board does not concur with the commenter's assertion that the EIR must be limited to measures included in the TCAO/DTR cost analysis. A fundamental purpose of an EIR is to identify ways in which a proposed project's significant environmental impacts can be mitigated or avoided. To implement this statutory purpose, an EIR must describe feasible mitigation measures that can minimize the project's significant environmental effects (CEQA Guidelines Section 15121(a) and 15126.4(a)). Please see responses to comments O-3-83 to O-3-100 and O-3160 to O-3-174 regarding the feasibility of specific mitigation measures.

O-3-7

The comment states: "The Regional Board Cannot Mandate Cleanup Methods: The proposed Project and alternatives (aside from the 'no project' alternative) each purport to dictate the method by which cleanup levels at the Site are to be achieved. However, because the Regional Board's authority under the Porter Cologne Act is limited to prescribing cleanup levels rather than selecting methods to achieve those cleanup levels, (Water Code § 13360), the Project and the alternatives proposing remediation each are 'legally infeasible' under CEQA because they cannot be adopted under the Porter Cologne Act."

The San Diego Water Board notes that Water Code section 13360 also states that: "(b) If the court, in an action for an injunction brought under this division, finds that the enforcement of an injunction restraining the discharger from discharging waste would be impracticable, the court may issue any order reasonable under the circumstances requiring specific measures to be undertaken by the discharger to comply with the discharge requirements, order, or decree."

Regardless, the evaluation of specific remedial actions in the Draft PEIR does not constitute an action by the San Diego Water Board to dictate how to achieve cleanup levels. The Project Description states that "Remedial actions may include dredging, application of clean sand cover, and/or natural recovery depending upon a number of factors, including levels of contamination in the sediment and site accessibility" (Draft PEIR, page 3-5). The use of a Programmatic EIR is appropriate to evaluate the potential impacts of a variety of means to conduct cleanup. The remedial actions evaluated in the Draft PEIR were developed in consultation with the stakeholders, including the Shipyards, the Port, and the San Diego Water Board.

O-3-8

The comment states: "I. THE DEIR'S ALTERNATIVES ANALYSIS IMPROPERLY OMITS CONSIDERATION OF MONITORED NATURAL ATTENUATION

"A. CEQA Requires Evaluation of Potentially Feasible Alternatives That Will Reduce Environmental Impacts

"In order to be legally valid and fulfill the EIR's purpose to 'foster informed decision making and public participation,' an EIR 'must consider a reasonable range of potentially feasible alternatives' that would 'avoid or substantially lessen any of the significant effects of the project.' 14 Cal. Code Regs. ('CEQA Guidelines') § 15126.6(a) (emphasis added); *Center for Biological Diversity v. County of San Bernardino*, 185 Cal. App. 4th 866, 885 (2010) ('The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making.'). The purpose of the alternatives discussion is to identify ways to reduce or avoid significant environmental effects, (*Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.*, 47 Cal. 3d 376, 403 (1988)), and proposed alternatives must be discussed to the extent that they are able to implement most although not all of the identified project objectives. See *Mira Mar Mobile Community v. City of Oceanside*, 119 Cal. App. 4th 477 (2004). Further, 'an in-depth discussion is required' of any alternative that is 'at least potentially feasible.' Center for Biological Diversity, 185 Cal. App. 4th at 883.

"An agency's selection of alternatives for evaluation in an EIR must be supported by a 'reasonable basis,' and an EIR is legally defective if it fails to include a reasonable explanation for excluding consideration of an alternative that would reduce environmental impacts and achieve most project objectives. Center for Biological Diversity, 185 Cal. App. 4th at 883. Moreover, the scope of the alternatives analysis is not subject to a 'categorical legal imperative,' rather '[e]ach case must be evaluated on its facts …' *Watsonville Pilots Ass'n v. City of Watsonville*, 183 Cal. App. 4th 1059, 1086 (2010)."

A detailed discussion of the deficiencies of Monitored Natural Attenuation as the sole cleanup remedy relied upon to attain TCAO cleanup objectives is contained in Responses 1.1, 31.1, and 32.1 in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D. See response to comment O-3-2.

O-3-9

The comment states: "B. The DEIR Was Required to Evaluate Monitored Natural Attenuation As an Alternative To The Project

"1. Overview of The Monitored Natural Attenuation Alternative

"Monitored Natural Attenuation ('MNA') refers to the reliance on natural processes to achieve site-specific remedial objectives. As explained in the DTR, MNA: [i]s a contaminated sediment remedy that depends on un-enhanced natural processes to reduce risk to human and environmental receptors to acceptable levels. [MNA] involves leaving the contaminated sediment in place and allowing the ongoing aquatic processes to contain, destroy, or otherwise reduce the bioavailability of the sediment pollutants in order to achieve site specific remedial action objectives. Underlying MN[A] processes may include biodegradation, biotransformation, bioturbation, diffusion, dilution, adsorption, volatilization, chemical reaction or destruction, resuspension, and burial by clean sediment."

The San Diego Water Board has determined that the alternatives analyzed in the Draft PEIR represent a reasoned selection of potential cleanup scenarios that would reduce (to varying degrees) the significant environmental effects associated with the proposed project, while achieving all or most of the stated project objectives. The Shipyards participated in three working group meetings in fall 2010 where the range of alternatives to be evaluated in the PEIR was discussed. A detailed discussion of the deficiencies of Monitored Natural Attenuation as the sole cleanup remedy relied upon to attain TCAO cleanup objectives is contained in Responses 1.1, 31.1, and 32.1 in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D. See response to comment O-3-2.

O-3-10

The comment states: "'Monitoring is fundamental to the remedy in order to assess whether risk reduction and ecological recovery by natural processes are occurring as expected.' Id. Thus, while dependent upon natural processes, MNA is not a 'no-action' remedy, as it must be used within the context of a carefully controlled and monitored cleanup approach.

"Although MNA is completely ignored in the DEIR, it was selected as the preferred alternative remedy out of the three studied in detail in the expert-prepared Detailed Sediment Investigation underlying the TCAO/DTR.[1] NASSCO and Southwest Marine Detailed Sediment Investigation ("Shipyard Report"), at 1-2 – 1-4. The Shipyard Report also provided the data underlying the TCAO and DTR. TCAO, at ¶ 13. The Shipyard Report concluded that 'natural recovery of benthic macroinvertebrate communities would be expected to occur within a 3–5 year period' if off-site sources were to be controlled, and that MNA 'is the only alternative that provides acceptable effects on beneficial uses and is technically and economically feasible.' Shipyard Report, at 15-3 and 19-12, 19-13. The Shipyard Report and its associated sediment investigation was 'detailed' and conducted with substantial oversight and input from Regional Board staff, stakeholders, and the public.

[1] The "MNA alternative" discussed in this letter refers to the monitored natural attenuation alternative evaluated in and recommended by the Shipyard Report.

Shipyard Report, at 1-2 – 1-4 (summarizing the directives and guidance provided by Regional Board staff throughout the planning and execution of the sediment investigation and Shipyard Report); Deposition of David Barker ('Barker Depo.'), at 80:2 – 80:22, 82:3 – 82:4, 82:14 – 82:23 (discussing the scope, quality, and extent of Regional Board staff involvement in the sediment investigation); Deposition of Tom Alo ('Alo Depo.'), at 402:21 – 403:18 (acknowledging that the Regional Board had significant oversight and involvement in the process of developing and conducting the sediment investigation and Shipyard Report); DTR, at 13-2 – 13-3 (summarizing Regional Board staff and stakeholder involvement in the sediment investigation)."

The San Diego Water Board has determined that the alternatives analyzed in the Draft PEIR represent a reasoned selection of potential cleanup scenarios that would reduce (to varying degrees) the significant environmental effects associated with the proposed project, while achieving all or most of the stated project objectives. The Shipyards participated in three working group meetings in fall 2010 where the range of alternatives to be evaluated in the PEIR was discussed. A detailed discussion of the deficiencies of Monitored Natural Attenuation as the sole cleanup remedy relied upon to attain TCAO cleanup objectives is contained in Responses 1.1, 31.1, and 32.1 in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D. See response to comment O-3-2.

O-3-11

The comment states: "The MNA alternative includes 'sampling to assess naturally occurring changes in sediment conditions and biological communities,' consisting of long-term monitoring, with periodic surveys and sample collection throughout areas of the Site not otherwise subject to disturbance, in order 'to track sediment quality and benthic community conditions over time.' Shipyard Report, at 17-1. More specifically, the alternative requires monitoring of physical, chemical, and biological parameters in four separate sampling events during years 1, 2, 5, and 10, and additional monitoring beyond year 10, if necessary, depending upon the degree to which natural recovery has occurred after 10 years. Shipyard Report, at 16-1. Monitoring stations would be located every 2 to 5 acres throughout the Site, depending on the chemical concentrations currently existing in the sediments (i.e., within the specified range, monitoring stations would be more closely spaced in areas with higher chemical concentrations.). Id., at 16-1 – 16-2. Each monitoring event would include bathymetry and core sampling for sediment thickness and physical properties (including particle size distribution, total solids, and TOC); monitoring of a selected set of metals, as well as butyltins, PCBs, and PAHs; and amphipod toxicity tests and benthic macroinvertebrate community assessments. Id. Reports would be prepared and submitted to the Regional Board after each monitoring event. Id."

The San Diego Water Board has determined that the alternatives analyzed in the Draft PEIR represent a reasoned selection of potential cleanup scenarios that would reduce (to varying degrees) the significant environmental effects associated with the proposed project, while achieving all or most of the stated project objectives. The Shipyards participated in three working group meetings in Fall 2010 where the range of alternatives to be evaluated in the PEIR was discussed. A detailed discussion of the deficiencies of Monitored Natural Attenuation as the sole cleanup remedy relied upon to attain TCAO cleanup objectives is contained in Responses 1.1, 31.1, and 32.1 in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D. See response to comment O-3-2.

O-3-12

The comment states: "The DEIR fails to offer any explanation, much less a 'reasoned' explanation, for completely omitting discussion or consideration of the MNA alternative. Because substantial evidence from multiple sources demonstrates that MNA can achieve the Project Objectives while avoiding the proposed Project's significant environmental impacts (and the need to rely on detailed, costly and uncertain mitigation measures), as discussed below, CEQA requires evaluation of MNA as an alternative remedy. Exclusion of MNA from the DEIR frustrates CEQA's goal of informed decision making and meaningful public participation, because it precludes the public from commenting on, and the Regional Board from considering and potentially adopting, a remedy that will avoid the Project's significant environmental impacts while achieving its objectives in a timely and cost-effective manner. Any doubt by Regional Board staff about whether MNA should have been considered is put to rest conclusively by the fact that it was the Shipyard Report's preferred remedy, mandating its inclusion in any 'reasonable range' of alternatives based on the specific facts of this proceeding. *Watsonville Pilots Ass'n*, 183 Cal. App. 4th at 1086."

See response to comment O-3-2. It is noted that in the Watsonville Pilot Association case cited by the commenter, the court noted that a reduced project alternative that would meet most of the project objectives should be considered. In the case of the MNA, and based on the record for the TCAO an d DTR, the San Diego Water Board concludes that an MNA Alternative would not further the project objectives related to environmental cleanup, therefore, it was appropriately excluded from evaluation in the EIR.

O-3-13

The comment states: "2. The Monitored Natural Attenuation Alternative Will Feasibly Attain Project Objectives

"Pursuant to the Regional Board's mandate, the primary purpose of the Project is to protect beneficial uses in San Diego Bay for human health, aquatic life, and aquatic-dependent wildlife, and to ensure the best water quality that is 'reasonable.' DEIR, at 3-3 and 3-4. Project Objectives also include the implementation of a sediment cleanup that is consistent with the TCAO, including the attainment of cleanup levels set forth in the TCAO, which will have long-term effectiveness while minimizing environmental impacts and disruptions on the use of shipyard and other San Diego Bay-dependent facilities. DEIR, at 3-4 and 3-5. As discussed below, substantial evidence demonstrates that natural recovery is already occurring at the Site, and that the MNA alternative is capable of fully satisfying Project Objectives in a feasible manner."

A detailed discussion of the deficiencies of Monitored Natural Attenuation as the sole cleanup remedy relied upon to attain TCAO cleanup objectives is contained in Responses 1.1, 31.1, and 32.1 in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D. See responses to comments O-3-2 and O-3-12.

O-3-14

The comment states: "The DTR acknowledges that "a range of natural recovery processes are active at the Shipyard Sediment Site." DTR, at 30-3. As detailed in NASSCO's May 26, 2011 comments on the TCAO and DTR,[1] record evidence shows that natural attenuation is already occurring at the site for all five primary contaminants of concern ('primary COCs') identified in the TCAO,[2] and that, if allowed to continue in lieu of dredging, will achieve the Regional Board's cleanup goals within a reasonable period of time. See Comments On The San Diego Regional Water Quality Control Board Cleanup Team's September 15, 2010 Tentative Cleanup And Abatement Order No. R9-2011-0001, Draft Technical Report, And Shipyard Administrative Record ('NASSCO's May 26 Comments'), at 40-41. Sampling conducted in 2009 indicates that the surface-weighted average concentrations ('SWACs')[3] for the five primary COCs decreased substantially in the monitored locations during the seven years since the data for the Shipyard Report was collected in 2002, and, in many cases, are now only slightly higher than post-remedial (i.e., dredging) SWACs in the TCAO. This suggests that the cleanup goals articulated in the TCAO can be achieved in a reasonable time through the MNA alternative, without incurring the significant environmental, economic, and social impacts that are certain to result from dredging. Barker Depo. Exhibit No. 1228. In fact, among the locations sampled in 2009, which were selected because they are considered representative of site-wide conditions, three of the five SWACs for primary contaminants of concern already have attained the post-remedial SWACs that would be required by the TCAO, and the remaining two are only slightly higher. Id.; see also Barker Depo., at 335:22

1 For the sake of brevity, and because NASSCO has already submitted detailed comments on the TCAO/DTR that are included within the Administrative Record, NASSCO will reference its prior comments in this letter rather than re-stating those comments in full. All of NASSCO's prior comments pertaining to the issues addressed in this letter are incorporated herein by this reference.

2 The primary COCs are copper, mercury, HPAHs, PCBs, and TBT. DEIR, at 4.3-3 and 4.3-4.

3 A "SWAC" approach, which refers to calculating the average concentration of a contaminant in the sediment at the surface, was used to assess potential impacts to human health and aquatic-dependent wildlife at the Site. DTR, at 32-7. The TCAO and DTR require that sediments be remediated to meet specified cleanup levels, articulated as post-remedial SWACs for the primary COCs, which levels have been determined by Regional Board staff not to pose an unreasonable health risk to humans or aquatic dependent wildlife. Id. Under the DTR's approach, once these extremely conservative target SWACs are met, through MNA or otherwise, the sediments will be considered fully protective of beneficial uses.)

– 337:13 (confirming same); see also Barker Depo., at 303:5 – 304:4 (acknowledging that MNA could eliminate risks to benthic organisms, and improve protection for all beneficial uses within five years).”

A detailed discussion of the deficiencies of Monitored Natural Attenuation as the sole cleanup remedy relied upon to attain TCAO cleanup objectives is contained in Responses 1.1, 31.1, and 32.1 in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D. See response to comment O-3-2.

O-3-15

The comment states: “Regarding the efficacy of natural attenuation, evidence within the Administrative Record demonstrates that sediments buried below approximately 10 cm are not “biologically available,”[1] and thus do not impact the water or marine environment. Evidence also shows that new sediments are deposited at a rate of 2 cm per year, suggesting that new sediments will bury any residual contamination within a reasonable period of time. Deposition of David Gibson (‘Gibson Depo.’), at 156:3 – 157:12 (agreeing that sediments buried below approximately 10 cm are below the “biologically active zones,” and therefore are not biologically available); Regional Board Cleanup Team’s Response to NASSCO’s Requests For Admission, at RFA No. 57 (agreeing that new sediments are deposited at a rate of 2 cm/year at the Shipyard Sediment Site); Barker Depo., at 292:6 – 292:22 (agreeing that Site characteristics, including active deposition of sediments at 1-2 cm per year, limited elevated concentrations of chemicals in certain areas of the shipyard, and that the limited bioavailability of the chemicals to benthic organisms favors the potential effectiveness of natural recovery).”

A detailed discussion of the deficiencies of Monitored Natural Attenuation as the sole cleanup remedy relied upon to attain TCAO cleanup objectives is contained in Responses 1.1, 31.1, and 32.1 in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D. See response to comment O-3-2.

1 The term “biologically available” refers to the potential for a chemical to enter into ecological or human receptors. Importance of Bioavailability for Risk Assessment of Sediment Contaminants at the NASSCO Site – San Diego Bay, Herbert E. Allen, Ph.D., March 11, 2011 (“Allen Report”), at 2. Sediments below the “biologically active zone”—which refers to the surface layer of sediment in which bioturbation and mixing occurs, and where the exposure potential is greatest for invertebrates and fish—are not “bioavailable.” The biologically active zone comprises approximately the top 10 cm of sediment; however, the most biologically active zone typically occurs within the top 0-2 cm. Deposition of David Gibson, at 156:3 – 157:12; Shipyard Report, at 15-3.

O-3-16

The comment states: "Additionally, 'chemical biodegradation;[1] sediment accumulation, mixing, and burial; and [concomitant] benthic fauna recolonization' are other natural processes that are expected to 'lead to changes in aquatic life conditions' at the Site. Shipyard Report, at 18-4 ('Natural recovery will occur through breakdown of organic chemicals and through burial and dilution of chemical concentrations by newly deposited sediment.')"

A detailed discussion of the deficiencies of Monitored Natural Attenuation as the sole cleanup remedy relied upon to attain TCAO cleanup objectives is contained in Responses 1.1, 31.1, and 32.1 in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D. See response to comment O-3-2.

O-3-17

The comment states: "3. The Monitored Natural Attenuation Alternative Will Avoid All Of the Proposed Project's Significant and Potentially Significant Impacts

"The DEIR recognizes that each of the Project's potential environmental impacts results from 'construction or dredging activity,' and that, in the absence of construction or dredging, no temporary construction traffic or noise would occur, and there would be no air quality impacts, contribution to global warming, objectionable odors, risk of accidental spills during cleanup activities, impacts to marine species or communities, or increased potential impacts related to hazards or marine biological resources. DEIR, at 5-10, 5-25. The same is true with respect to all alternatives considered except for the 'no-project' alternative."

The comment summarizes information contained in the Draft PEIR. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-18

The comment states: "Because it involves no construction or dredging, it is undisputed that implementing the MNA alternative will avoid all of the Project's significant environmental impacts to air quality, as well as its potentially significant effects to biological resources, water quality, hazardous materials and traffic, all of which are tied specifically to dredging.

[1] Site constituents and primary COCs such as TBT and PAHs are known to naturally degrade relatively quickly in the marine environment. See Barker Depo, at 335:22 – 336:10 (testifying that TBT undergoes rapid natural degradation in the environment, and confirming that the 2009 testing results are consistent with previous findings concerning the rapid biodegradation of TBT); Shipyard Report, at 15-3 ("Petroleum hydrocarbons … weather relatively quickly. The most toxic components of petroleum hydrocarbons are broken down in weeks to months in the marine environment. As a result, remediation of subtidal sediments is ordinarily not required even after a major oil spill. A relatively short period of natural recovery is therefore expected to address any effects of petroleum hydrocarbons.").

The MNA alternative would also avoid the Project's proposed destruction of highly sensitive eelgrass and mature benthic communities, and obviate the Project's mandatory reliance on numerous mitigation measures which are costly and uncertain, and which will cause their own environmental impacts requiring mitigation (NASSCO also believes that many of these mitigation requirements are infeasible or otherwise inappropriate, and may not be imposed by the Regional Board, as detailed below, such that certain of the impacts deemed potentially significant would need to be treated as significant if the proposed Project is adopted). In this way, the environmental impacts associated with the MNA alternative would be equivalent to those of the 'no project/no development alternative' (Alternative 1) studied in the DEIR, which was found to be the 'environmentally superior' alternative 'because the direct physical effects of the proposed project would not occur.' DEIR, at 5-25 (emphasis added)."

The comment summarizes information contained in the Draft PEIR and notes that, since an MNA Alternative would not remove the contaminated sediment, it would not result in the adverse impact associated with dredging. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-19

The comment states: "A wealth of evidence elsewhere in the Administrative Record likewise shows that the MNA alternative will not implicate the environmental and other costs associated with dredging. See, e.g., Shipyard Report, at § 19 (comparing a variety of alternatives and concluding that dredging alternatives 'provide little or no incremental benefit over baseline conditions but impose significant impacts on shipyard operations and on the local community, and do so at a high cost'); see also Barker Depo., at 306:22 – 307:21 (acknowledging the existence of healthy benthic communities at the Site, agreeing that MNA would preserve those communities and avoid the possible risk of colonization by invasive species, and recognizing that these factors weigh in favor of selecting MNA over dredging), 916:22 – 917:2 (avoiding destruction of the mature benthic communities and eelgrass beds located at the Site would be one benefit of selecting the MNA alternative)."

A detailed discussion of the deficiencies of Monitored Natural Attenuation as the sole cleanup remedy relied upon to attain TCAO cleanup objectives is contained in Responses 1.1, 31.1, and 32.1 in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D. See response to comment O-3-2 and O-3-18.

O-3-20

The comment states: "By contrast to natural recovery, the DTR confirms that dredging 'destroys the benthic community,' with no guarantee that it will be recolonized successfully. DTR, at 34-11; see also Barker Depo., at 306:22 – 307:21. Dredging destroys other biota as well, such as eelgrass, which may require more than five years to become reestablished and mature to the point that they can sustain the original community. Shipyard Report, at 15-10, 18-9 – 18-10. Moreover, 'eelgrass is currently found primarily in areas with water depths less than 10 ft and may not be able to reestablish itself in the deeper water that would exist in the dredged areas' regardless of any mitigation that is imposed. Shipyard Report, at 18-12. Critically, the MNA alternative also avoids the very real possibility that the Project will be implemented and substantial amounts of sediment dredged, only to have the dredged areas recontaminated by ongoing and uncontrolled stormwater discharges to the Site from Chollas Creek and elsewhere. As noted, natural recovery is already occurring at the Site even in the presence of continuing sources of stormwater discharges to the Site. The TCAO and DTR recognize that these stormwater discharges continue to affect sediments at the Site, (TCAO, at ¶¶ 4, 11, 30, 32, 33; DTR, at §§ 4.7, 11.6, 30, 32, 33), although the DEIR failed to evaluate this reasonably foreseeable significant impact."

The comment references the DTR and the Shipyard Report, not the Draft PEIR. See response to comment O-3-2 regarding an MNA Alternative. See response to comment O-3-3 regarding stormwater.

O-3-21

The comment states: "Given that source control is a critical component of any remedy that is selected,[1] it certainly makes more sense to ensure that source control is achieved before incurring the significant costs associated with dredging, since recontamination may obviate any beneficial results of the dredging, and since natural recovery is already occurring at the Site even in the presence of ongoing stormwater contamination. The MNA alternative would allow source control to be implemented, and continued monitoring could determine whether the TCAO's cleanup levels are achieved through natural recovery and without the need for dredging. If dredging ultimately is required, which NASSCO does not believe it will be, that dredging would be more effectively implemented after stormwater discharges to the Site are controlled."

A detailed discussion on the basis for the San Diego Water Board Cleanup Team's conclusion that cleanup pursuant to the TCAO can proceed while source control efforts are underway is contained in Response 4.1 in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D. See response to comment O-3-3.

O-3-22

The comment states: "4. Monitored Natural Attenuation is Not a 'No Action' Remedy

[1] According to EPA Guidance, "[i]dentifying and controlling contaminant sources typically is critical to the effectiveness of any [ ] sediment cleanup." Contaminated Sediment Remediation Guidance for Hazardous Waste Sites, EPA-540-R5-05-012 (Dec. 2005), at 2-20.

"As the Cleanup Team acknowledges, '[m]onitored natural recovery is not a passive, no-action, or no-cost remedy:

"'While it does not require active construction, effective remediation via MN[A] relies on a fundamental understanding of the underlying natural processes that are occurring at the site. MN[A] remedies require extensive risk assessment, site characterization, predictive modeling and monitoring to verify source control, identify natural processes, set expectations for recovery, and confirm that natural processes continue to reduce risk over time as predicted.'

"DTR, at 30-2 (emphasis added); see also Shipyard Report, at 17-1 (describing detailed monitoring requirements associated with MNA). Indeed, the DEIR recognizes that '[r]emedial actions may include … natural recovery.' DEIR, at 3-5."

The comment references the DTR and the Shipyard Report, not the Draft PEIR. See response to comment O-3-2.

O-3-23

The comment states: "In addition to detailed monitoring requirements, the MNA alternative also contemplates active remediation (or other action) if necessary based on the monitoring results. E.g., Barker Depo., at 916:16 – 917:17 (testifying that if MNA is selected and does not work as expected, the Regional Board could impose dredging or another remedy). Thus, the 'no project/no development' alternative, which 'would not implement the TCAO,' (DEIR, at 5-9), and would not include any monitoring or associated requirements, plainly is distinguishable from implementing the MNA alternative."

See response to comment O-3-2.

O-3-24

The comment states: "By way of analogy, in *Watsonville Pilots Association v. City of Watsonville*, the court rejected an agency's claim that the EIR's analysis of a no project alternative in the context of a general plan approval constituted sufficient consideration of a reduced development alternative, because 'the environmental impacts of the project were primarily due to the impacts of growth itself' and 'the alternatives analysis should have included an assessment of a reduced growth alternative that would meet most of the objectives of the project but would avoid or lessen these significant environmental impacts.' 183 Cal. App. 4th at 1089-90. Instead, '[b]ecause … the 'no project' alternative would not create any plan for the future … it did not serve the purpose that a reduced development alternative should have served … Analysis of such an alternative would have provided the decision makers with information about how most of the project's objectives could be satisfied without the level of environmental impacts that would flow from the project.' Id. at 1090. Accordingly, the city's certification of the EIR was set aside.

"Here, because taking 'no action' would not implement the TCAO or serve the purposes of the MNA alternative, an "in-depth discussion" of the MNA alternative is required. Center for Biological Diversity, 185 Cal. App. 4^{th} at 883."

It is noted that in the Watsonville Pilot Association case cited by the commenter, the court noted that a reduced project alternative that would meet most of the project objectives should be considered. In the case of the MNA, and based on the record for the TCAO an d DTR, the San Diego Water Board concludes that an MNA Alternative would not further the project objectives related to environmental cleanup, therefore, it was appropriately excluded from evaluation in the EIR. A detailed discussion of the deficiencies of Monitored Natural Attenuation as the sole cleanup remedy relied upon to attain TCAO cleanup objectives is contained in Responses 1.1, 31.1, and 32.1 in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D. See also response to comment O-3-2.

O-3-25

The comment states: "C. The Monitored Natural Attenuation Alternative Should Be Adopted

"As explained, NASSCO believes that CEQA compels the DEIR to evaluate the MNA alternative before the Regional Board may approve the proposed Project. More importantly, however, the Regional Board should adopt the MNA alternative instead of the Project because MNA provides the opportunity to feasibly accomplish Project Objectives, in a reasonable period of time, without the environmental impacts, costs and economic and social disruptions that will result from the contemplated dredging of 143,000 cubic yards of sediment. Indeed, the Regional Board is prohibited from adopting the proposed Project instead of the MNA alternative, due to CEQA's 'substantive mandate' that agencies refrain from approving projects with significant environmental effects if there are feasible alternatives that can avoid those effects. *Mountain Lion Foundation v. Fish & Game Comm.*, 16 Cal. 4^{th} 105, 134 (1997)."

A detailed discussion of the deficiencies of Monitored Natural Attenuation as the sole cleanup remedy relied upon to attain TCAO cleanup objectives is contained in Responses 1.1, 31.1, and 32.1 in the *Response to Comments Report*, *Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site*, *San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D. See response to comment O-3-2. The San Diego Water Board has determined that the alternatives analyzed in the Draft PEIR represent a reasoned selection of potential cleanup scenarios that would reduce (to varying degrees) the significant environmental effects associated with the proposed project, while achieving all or most of the stated project objectives. The Shipyards participated in three working group meetings in fall 2010 where the range of alternatives to be evaluated in the PEIR was discussed.

O-3-26

The comment states: "Upon request, NASSCO will be pleased to provide the Regional Board with any further information regarding the MNA alternative that it may wish to consider, in addition to the large volume of supporting evidence already included within the Administrative Record; and, as explained below, NASSCO will also provide a detailed analysis of the MNA alternative for inclusion in a recirculated DEIR."

The commenter's offer to provide more information is noted. A detailed discussion of the deficiencies of Monitored Natural Attenuation as the sole cleanup remedy relied upon to attain TCAO cleanup objectives is contained in Responses 1.1, 31.1, and 32.1 in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D. See response to comment O-3-2.

O-3-27

The comment states: "II. THE DEIR FAILS TO DISCUSS STORMWATER DISCHARGES TO THE SITE OR REASONABLY FORESEEABLE IMPACTS FROM RECONTAMINATION

"A. An Accurate Description of the Project's Environmental Setting Is Critical to An Accurate Assessment of Impacts and Alternatives

"An EIR is not required unless a proposed activity may result in a 'significant effect on the environment.' CEQA § 21100(a). Significant environmental effects are defined as substantial or potentially substantial adverse changes in the environment. CEQA §§ 21068, 21100(d); CEQA Guidelines § 15382. The 'environment' for the purposes of CEQA analysis refers to the 'the physical environmental conditions in the vicinity of the project' – normally 'as they exist at the time the notice of preparation [for the EIR] is published' – and this environmental setting is referred to as the 'baseline' against which the potential impacts of a proposed project are measured. CEQA Guidelines § 15125(a). In order to assess whether a project will have a potentially significant impact, the potential effects of a proposed activity are measured against this existing conditions 'baseline.' CEQA Guidelines § 15126.2(a) ('In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published …') (emphasis added).

"Because an EIR 'must demonstrate that the significant environmental impacts of the proposed project were adequately investigated and discussed … in the full environmental context,' (CEQA Guidelines § 15125(c)), an EIR is invalid if its description of the environmental setting is in any way deficient. *Cadiz Land Co. v. Rail Cycle*, L.P., 83 Cal. App. 4th 74, 87 (2000) ('If the description of the environmental setting of the project site and surrounding area is inaccurate, incomplete or misleading, the EIR does not comply with CEQA.') This is because an 'inadequate description of the environmental setting for the project' makes 'a proper analysis of project impacts [] impossible.' *Galante Vineyards v. Monterey Peninsula Water Management Distr.*, 60 Cal. App. 4th 1109, 1122 (1997)."

A detailed discussion on the basis for the San Diego Water Board Cleanup Team's conclusion that cleanup pursuant to the TCAO can proceed while source control efforts are underway is contained in Response 4.1 in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D. See response to comment O-3-3.

O-3-28

The comment states: "B. The DEIR Ignores Ongoing Sources of Contamination to the Site and Associated Impacts From Recontamination

"The DEIR's description of the environmental setting completely ignores discharges of urban runoff to the Site from Chollas Creek, as well as stormwater discharges to the Site via storm drains SW4 and SW9, all of which are continuing and uncontrolled.[1] Because substantial evidence makes clear that these on-going discharges contribute pollutants to the sediments at the Site, and thus present a reasonable likelihood that the Site could be recontaminated after the Project's contemplated dredging, the DEIR's decision to exclude them from the environmental setting is improper as a matter of law and also precludes a legally adequate consideration of environmental impacts and alternatives. See, e.g., *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus*, 27 Cal. App. 4th 713, 725-29 (1994) (environmental setting invalid as a matter of law, and rendered inadequate the impact analysis and mitigation findings, where the EIR failed to discuss a nearby wildlife preserve)."

A detailed discussion on the basis for the San Diego Water Board Cleanup Team's conclusion that cleanup pursuant to the TCAO can proceed while source control efforts are underway is contained in Response 4.1 in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D. See response to comment O-3-3.

[1] Pollutants in these discharges include metals, such as arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc; TSS; sediment; petroleum products; and synthetic organics, such as pesticides, herbicides, and PCBs. DTR, at 4-6.

O-3-29

The comment states: "As discussed in NASSCO's May 26 Comments, and stated clearly in the TCAO and DTR (and the supporting technical studies cited in the DTR),[1] substantial evidence shows that Chollas Creek discharges have contributed (and will continue to contribute) to the accumulation of pollutants observed in marine sediments at the Site; and, further, that the discharge of contaminants from Chollas Creek is not expected to be fully controlled for decades. May 26 Comments, at 35-39; see also TCAO, at ¶¶ 4 and 10 ('during storm events, storm water plumes toxic to marine life emanate from Chollas Creek up to 1.2 kilometers into San Diego Bay, and contribute to pollutant levels at the Shipyard Sediment Site.'); DTR, at 4-1, 4-14 – 4-15 (confirming that the toxic plume of contaminated stormwater from Chollas Creek during rain events has been shown to extend more than a kilometer into San Diego Bay, including the area within NASSCO's leasehold, and contributes an array of pollutants to the Site); Deposition of Craig Carlisle ('Carlisle Depo.'), at 200:5-200:13 (confirming that Chollas Creek releases contributed to sediment contamination at the Site); Barker Depo., at 921:14 – 922:15 (confirming that storm water outflows from Chollas Creek have contributed to the accumulation of pollution in marine sediment at the Site, and that these outflows reach the inner portion of NASSCO's leasehold), 923:8 – 923:15 (confirming that Stations NA19, NA06, NA15 and NA17 within the Site are potentially subject to influence from Chollas Creek); Carlisle Depo., at 104:5 – 105:3 (same). The TCAO and DTR also specifically identify urban runoff from SW4 and SW9 as sources contributing to sediment contamination at the Site. TCAO, at ¶¶ 4 and 10; DTR, at § 4; see also, e.g., Carlisle Depo., at 102:23 – 103:21 (concluding that chemicals discharged from SW9 impact the area to be addressed in the TCAO); 207:2 – 207:7."

The comment references the DTR and other documents, not the Draft PEIR.

A detailed discussion on the basis for the San Diego Water Board Cleanup Team's conclusion that cleanup pursuant to the TCAO can proceed while source control efforts are underway is contained in Response 4.1 in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D. See response to comment O-3-3.

O-3-30

The comment states: "Because these sources are continuing, logic dictates against dredging sediments at the Site until the sources are controlled, given the potential for subsequent recontamination. Indeed, the Shipyard Report concluded that 'remediation of shipyard sediments prior to control of contaminant sources would be premature. Remediation would

[1] DTR, at § 4.7.1.3 (collecting studies concluding that toxic storm water flows from Chollas Creek impact the sediments at the Site, including Schiff (2003); Katz (2003); and Chadwick, et al. 1999. Sediment Quality Characterization - Naval Station San Diego Final Summary Report. U.S. Navy Technical Report 1777.

be ineffective because the shipyard leaseholds would be recontaminated by Chollas Creek and storm drain effluent.' Shipyard Report, at 13-3."

A detailed discussion on the basis for the San Diego Water Board Cleanup Team's conclusion that cleanup pursuant to the TCAO can proceed while source control efforts are underway is contained in Response 4.1 in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D. See response to comment O-3-3.

O-3-31

The comment states: "Moreover, members of the Cleanup Team have acknowledged it is 'probable' that discharges from Chollas Creek will remain uncontrolled for the foreseeable future. Deposition of Benjamin Tobler ('Tobler Depo.'), at 90:6 – 92:5. No reductions are required under the Chollas Creek TMDL for metals[1] until 2018, and full compliance is not required until October 2028. RWQCB Resolution No. R9-2007-0043, at ¶ 13; Barker Depo., 925:19-927:25. And it is unlikely that full compliance with the TMDL will be achieved even within the twenty-year timeframe set forth in the TMDL, because existing technology is simply insufficient and cost-prohibitive. Tobler Depo., at 90:6 – 92:5 ('[W]ithout getting into space-age technology, which is extremely cost-prohibitive, the only possible fix for the problem is a system of sand filters. Sand filters do filter out metals, but even sand filters only get you into the general ballpark for meeting compliance. In other words, the best sand filters right now only just barely get you to the ballpark of compliance. There's no margin of safety with it.') Thus, according to Regional Board staff, it is 'probable' that full compliance will not be achieved, even after 20 years and significant infrastructure improvements, 'unless technology comes to the rescue.'"

See response to comment O-3-3. Resolution No. R9-2003-0043 adopted a TMDL for dissolved metals in Chollas Creek, not contaminated sediment which is the media of principal concern for the Shipyard Sediment Site. Contaminated sediment discharges from Chollas Creek will be addressed in the sediment TMDL for the mouth of Chollas Creek that is in preparation at this time. Available storm water best management practices for sediment

[1] Since 1994, Chollas Creek storm water samples have frequently exceeded Basin Plan narrative water quality objectives for toxicity, and California Toxics Rule criteria for copper, lead, and zinc. DTR, at 4-12. As a result, Chollas Creek was placed on the Clean Water Act section 303(d) List of Water Quality Limited Segments in 1996 for cadmium, copper, lead, zinc and toxicity, with zinc, copper, and diazinon subsequently identified as causes of the observed toxicity. Chollas Creek TMDL for Metals, Background, (available at http://www.waterboards.ca.gov/sandiego/water_issues/programs/tmdls/chollascreekmetals.shtml). Chollas Creek was also designated as a priority hot spot due to the presence of copper, DDT, chlordane and diazinon in the sediments, and the presence of impacts to aquatic life. RWQCB, Proposed Regional Toxic Hot Spot Cleanup Plan (Dec. 1997), at 1-16; Shipyard Report, at 1-16 – 1-17. To address these problems, TMDLs were adopted for diazinon and metals in Chollas Creek, and the Regional Board is currently in the process of developing a TMDL for PCBs, PAHs, and chlordane at the mouth of Chollas Creek. Id. The Chollas Creek TMDL for metals allocates quantitative limits for point and nonpoint discharges of copper, lead, and zinc, with the goal of ensuring that the capacity of the waterbody to assimilate pollutant loading is not exceeded.

control are capable of eliminating most, if not all sediment discharges from the Chollas Creek MS4 and are not cost prohibitive

O-3-32

The comment states: “While it is undisputed that stormwater discharges are reaching the Site and have contributed to sediment contamination at the Site, and that Regional Board staff are well aware of same, the DEIR fails even to mention these sources of pollution, much less address the potential for recontamination. This oversight is particularly egregious given that EPA and Regional Board policies concerning sediment remediation each call for source control prior to any active remediation. Contaminated Sediment Remediation Guidance for Hazardous Waste Sites, EPA-540-R5-05-012 (Dec. 2005) (‘Contaminated Sediment Remediation Guidance’), at 2-21 (‘Generally, significant continuing upland sources … should be controlled to the greatest extent possible before sediment cleanup.’); State Water Resources Control Board Resolution No. 92-49, at III. E.; EPA’s Contaminated Sediment Management Strategy, EPA-823-R-98-001 (Apr. 1998), at 54 (recognizing pollution prevention and source control as methods that will allow contaminated sediments to recover naturally without unacceptable impacts to beneficial uses). In fact, EPA Guidance specifically provides that ‘project managers should consider the potential for recontamination and factor that potential into the remedy selection process … before any sediment action is taken.’ Contaminated Sediment Remediation Guidance, at 2-21 (emphasis added).”

In accordance with the requirements of CEQA, an EIR must identify and focus on the significant environmental effects of the proposed project. Because the purpose of an EIR is to assess the project’s effects on the existing environment, an EIR need not resolve existing environmental problems that will not be made worse by the project. See response to comment O-3-3.

O-3-33

The comment states: “This Regional Board and its staff are certainly aware of the need for source control prior to active remediation, given, among other things, the experience at the Convair Lagoon site in San Diego Bay, where significant funds were expended to construct a cap to remediate PCBs, only to subsequently find PCBs on top of the cap, apparently due to incomplete source control (among other potential causes). E.g., Barker Depo., at 183:22 – 183:25. Ironically, the DEIR recognizes the potential for recontamination in its analysis of the Convair Lagoon alternative, noting the prior history at Convair Lagoon and explaining that the current Convair Lagoon CAO requires discharges to be abated, to the satisfaction of the State Board, before any further remedial actions may be conducted at Convair Lagoon. DEIR, at 5-35, 5-208, 5-211, 5-225 (‘The CAO states that soil and groundwater must be cleaned up and waste discharges abated prior to conducting remedial actions in Convair Lagoon and San Diego Bay to prevent potential recontamination of the marine sediments in the bay.’). Inexplicably, however, the DEIR simultaneously fails even to mention potential recontamination in relation to the proposed Project. See also Deposition of Cynthia Gorham, at 62:4 – 62:23 (acknowledging that dredging prior to source control may lead to recontamination).”

A detailed discussion on the basis for the San Diego Water Board Cleanup Team’s conclusion that cleanup pursuant to the TCAO can proceed while source control efforts are underway is contained in Response 4.1 in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D. See response to comment O-3-3.

O-3-34

The comment states: “The DEIR also ignores other potential sources of recontamination that could occur after the Project’s contemplated dredging. For example, while the DEIR concedes that resuspension of sediment caused by dredging related ship/barge movements is a potentially significant impact, (DEIR, at 4.3-15), it wholly fails to consider resuspension from non-dredging related ship movements. See also DEIR, at 4.3-15 (discussing potential for resuspended sediment to be introduced into the water column during placement of silt curtains).”

Non-dredging related ship movement is a well-established existing condition in the San Diego Bay. In accordance with the requirements of CEQA, an EIR must identify and focus on the significant environmental effects of the proposed project. Because the purpose of an EIR is to assess the project’s effects on the existing environment, an EIR need not resolve existing environmental problems that will not be made worse by the project. See response to comment O-3-3.

O-3-35

The comment states: “The DEIR’s failure to discuss urban runoff/stormwater discharges to the Site and the potential for Site recontamination precludes a proper consideration of the Project’s potential environmental impacts or comparison of alternatives, and renders the DEIR invalid.”

In accordance with the requirements of CEQA, an EIR must identify and focus on the significant environmental effects of the proposed project. Because the purpose of an EIR is to assess the project’s effects on the existing environment, an EIR need not resolve existing environmental problems that will not be made worse by the project. A detailed discussion on the basis for the San Diego Water Board Cleanup Team’s conclusion that cleanup pursuant to the TCAO can proceed while source control efforts are underway is contained in Response 4.1 in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D. See response to comment O-3-3.

O-3-36

The comment states: "C. The Proposed Project May Not Feasibly Attain Project Objectives Due to the Likelihood That The Site Will Be Recontaminated After Dredging

"Among others, the Project includes an objective of implementing a cleanup plan 'that will have long-term effectiveness.' DEIR, at 3-5. Even setting aside the proposed Project's significant environmental effects and questions regarding the necessity of the contemplated dredging or the efficacy of related mitigation measures, the proposed dredging may not ultimately be effective, or have 'long-term effectiveness,' if the dredged areas are subsequently recontaminated by ongoing sources of contamination to the Site. This is another reason why the DEIR must describe those sources and analyze the reasonably foreseeable and potentially significant impacts from recontamination, and identify any mitigation measures or alternatives to address this impact."

The statement of project objectives identifies the underlying purpose of the project, and is used to guide the selection of alternatives to be evaluated in an EIR. The San Diego Water Board has concluded that the proposed project would achieve all 11 of the project objectives, including the objective to "Implement a cleanup plan that will have long-term effectiveness." The commenter expresses an opinion about the long-term efficacy of the project. This comment will be included as part of the record and made available to the decision makers prior to a final decision on the project. A detailed discussion on the basis for the San Diego Water Board Cleanup Team's conclusion that cleanup pursuant to the TCAO can proceed while source control efforts are underway is contained in Response 4.1 in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D. See response to comment O-3-3.

O-3-37

The comment states: "Potential recontamination of the Site also weighs in favor of adopting the MNA alternative, which would allow source control to be addressed prior to any dredging, while confirming whether natural recovery is achieving the cleanup levels in the TCAO."

The comment expresses an opinion in favor of an MNA Alternative, and is not a comment on the environmental analysis contained in the Draft PEIR. This comment will be included as part of the record and made available to the decision makers prior to a final decision on the project. See response to comment O-3-3.

O-3-38

The comment states: "III. THE BASELINE DOES NOT REFLECT EXISTING CONDITIONS

"A. The Baseline Must Be Premised On *Existing* Physical Conditions

"As noted, potentially significant impacts are assessed in an EIR by measuring the potential effects of a proposed activity against a 'baseline.' CEQA Guidelines § 15126.2(a) ('In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the *existing* physical conditions in the affected area as they *exist* at the time the notice of preparation is published …') (emphasis added). Regarding the selection of a 'baseline,' the California Supreme Court recently confirmed that the lead agency must use "existing physical conditions." *Communities for a Better Env't v. South Coast Air Quality Mgmt. Dist.*, 48 Cal. 4th 310, 316, 319, 321 n. 7 (2010) (proper baseline for determining whether there would be significant environmental effects from emissions caused by proposed modifications to an oil refinery was the refinery's current existing operations, rather than its maximum permitted operations); see also *Eureka Citizens for Responsible Government v. City of Eureka*, 147 Cal. App. 4th 357, 370 (2007) ('environmental impacts should be examined in light of the environment as it exists when a project is approved')."

The comment states that the existing condition is typically the baseline of analysis under CEQA. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary. See also response to comment O-3-4.

O-3-39

The comment states: "Case law makes clear that '[a]n EIR must focus on impacts to the existing environment, *not hypothetical situations*.'" *Sunnyvale West Neighborhood Ass'n v. City of Sunnyvale*, 190 Cal. App. 4th 1351, 1373 (2010) (emphasis added). This is because "[a]n approach using hypothetical … conditions as the baseline results in 'illusory' comparisons that 'can only mislead the public as to the reality of the impacts and subvert full consideration of the actual environmental impacts,' a result at direct odds with CEQA's intent.' *Id.* at 1374. 'It is only against [a proper] baseline that any significant environmental effects can be determined.' *Id.* at 1373."

In light of the extensive history of studies pertaining to the project, including sampling and other analyses used to prepare the DTR and TCAO, the San Diego Water Board concludes that the information contained in the DTR appropriately and more than adequately characterizes the existing sediment quality for the purpose of the Draft PEIR, and is not a "hypothetical" situation as asserted in the comment. See also response to comment O-3-4.

O-3-40

The comment states: "Agencies possess discretion to decide how the existing physical conditions can most realistically be measured, so long as that determination is supported by substantial evidence. *Communities for a Better Environment*, 48 Cal. 4th at 328. '[T]he date for establishing a baseline cannot be a rigid one. Environmental conditions may vary from year to year and in some cases it is necessary to consider conditions over a range of time periods.' *Id.* at 327-28."

The comment provides information about CEQA. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-41

The comment states: "B. The DEIR's Description of Sediment Quality at the Site Is Based On Hypothetical Assumptions Used In the TCAO and DTR

"Based on the most cursory purported description of sediment quality at the Site, (DEIR, at 4.3-2; 3-3), the DEIR assumes (without providing any factual or analytical support) that Site sediments present risks to aquatic life, aquatic-dependent wildlife and human health beneficial uses. These assumptions color the entire CEQA review, including the Project Objectives and the analysis of alternatives and mitigation measures, and go to the heart of the decision whether the proposed Project should be pursued notwithstanding its undisputed significant and potentially significant environmental impacts. It is clear that the DEIR premises its statements regarding sediment quality on the TCAO and DTR, which the Project is designed to implement. But the TCAO's conclusions of risk to beneficial uses at the Site are predicated on assumptions that are overly conservative and unrealistic—by design and as admitted by the Cleanup Team, with an intent of being overly protective. Regardless of whether or not the Regional Board's highly conservative assumptions are appropriate in the context of the Project's evaluation under the Porter Cologne Act (NASSCO believes they are not), such assumptions cannot form a proper baseline under CEQA, as a matter of law, because CEQA mandates that the baseline reflect actual, existing conditions rather than hypothetical or theoretical scenarios. *Sunnyvale*, 190 Cal. App. 4^{th} at 1373."

The San Diego Water Board's statutory duty to ensure restoration and enhancement of beneficial uses under Division 7 of the Water Code *demands* that the San Diego Water Board make reasonably conservative and environmentally protective assumptions about exposure, consumption, and risk in determining potential effects to beneficial uses from the pollutants accumulated in the sediment. A detailed discussion on the statutory and technical basis supporting the San Diego Water Board Cleanup Team's conservative exposure parameter assumptions used in the aquatic dependent wildlife and human health risk assessments is contained in Responses 24.1and 28.1, respectively, in the *Response to Comments Report, Tentative Cleanup and Abatement Order No. R9-2011-0001 and Draft Technical Report for the Shipyard Sediment Site, San Diego Bay* dated August 23, 2011. This report is incorporated into this RTC as Appendix D. See response to comment O-3-4.

O-3-42

The comment states: "A wealth of information in the Administrative Record shows that existing conditions at the Site present no risk to aquatic life, aquatic-dependent wildlife or human health beneficial uses. Rather, actual conditions are protective of beneficial uses, and the 'risks' identified in the DTR were manufactured by compounding a series of overly conservative and unrealistic assumptions. *See* NASSCO's May 26 Comments, at 7-34. In fact, the Shipyard Report concluded that Site conditions were protective of beneficial uses based on sampling conducted in 2002-03;[1] and, as explained above, supplemental 2009 sampling (the most recent data available) demonstrates that natural attenuation has since reduced further the SWACs for primary COCs at the Site, and that for three of the five primary COCs the SWACs are already below the post-remediation levels required by the TCAO at the locations monitored in 2009. Shipyard Report, at 18-4; Barker Depo., Ex. 1228."

The comment references the DTR and the Shipyard Report, not the Draft PEIR. This comment expresses an opinion and is not a comment on the environmental analysis contained in the Draft PEIR. This comment will be included as part of the record and made available to the decision makers prior to a final decision on the project.

O-3-43

The comment states: "The hypothetical assumptions in the DTR and TCAO that are the foundation of the DEIR's environmental setting and baseline regarding sediment quality and alleged risks to beneficial uses are summarized below."

See response to comment O-3-4.

O-3-44

The comment states: "1. Aquatic-Dependent Wildlife

"In assessing risks to aquatic-dependent wildlife, Regional Board staff assumed that each of the six species of concern that were evaluated[2] derived 100% of their diet from prey obtained within the Site. DTR, at § 24.2.2, Table 24-6. This assumption is entirely unrealistic for all six receptors—and was in no way predicated on the actual foraging activities of the receptors or any studies, guidelines or other agency documents. *E.g.*, Alo Depo., at 333:11-334:2; 345:8-346:13. The home range for each receptor is substantially greater than the 43 acre shipyard area, demonstrating that the receptors will travel well beyond (and consume prey outside) the confines of the shipyards. It also is unrealistic to assume that any receptor would

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1 Because the data underlying the TCAO and DTR was collected in 2002–2003, and because that data is the most recent comprehensive data set for the Site, it may appropriately be used to establish the baseline. It is also appropriate to consider the data collected in 2009. *Communities for a Better Environment*, 48 Cal. 4th at 328.

2 The DTR's aquatic-dependent wildlife analysis evaluated the California Least Tern, the California Brown Pelican, the Western Grebe, the Surf Scoter, the California Sea Lion, and the East Pacific Green Turtle. DTR, at Table 24-4.

choose to forage exclusively in an active industrial shipyard where the habitat quality is low for all species. Expert Report, of Thomas C. Ginn, Ph.D. ('Ginn Report'), at 59-61. By contrast, using a realistic assumption of each receptor's foraging area, alone, demonstrates that there is no risk to any of the receptors at the NASSCO shipyard. *Id*. Thus, the DTR's finding of risk to aquatic-dependent wildlife is entirely dependent upon Regional Board staff's policy decision to assume receptors would consume 100% of their diet at the shipyards; is not reflective of existing conditions at the Site; and cannot be used to inform the DEIR's baseline under CEQA."

The comment references the DTR, which is an attachment to the TCAO. The Draft PEIR relied primarily on separate project-specific and region-wide biological analyses, as described in Section 4.5, and did base conclusions on the assumption that special-status species foraged exclusively in the Shipyard Site. See response to comment O-3-4 regarding the existing conditions baseline.

O-3-45

The comment states: "It is notable that in assessing the Project's impacts to the California Least Tern (one of the six receptors evaluated in the DTR's aquatic-dependent wildlife analysis), the DEIR states that the Site is only a "very small area of San Diego Bay" and that there are other open water areas available for foraging. DEIR, at 4.5-51. The DEIR also notes that 'the majority of the sediment remediation site is in an area with relatively low abundance of prey species' for the least tern, and that '[t]here is no shallow water foraging habitat at the project site, limiting feeding opportunities.' DEIR, at 4.5-51, 52. In other words, the DEIR's biological analysis emphatically refutes the DTR's assumption that a least tern would consume 100% of its diet from the Site, and precludes any reliance on such an assumption in selecting the environmental baseline relative to the effect of Site sediments on aquatic-dependent wildlife beneficial uses."

See response to comment O-3-4 regarding the existing conditions baseline. See Section 4.5 of the Draft PEIR for an assessment of potential project impacts to the least tern. The San Diego Water Board concurs with the commenter's apparent position that the Draft PEIR appropriately characterizes the existing setting with regard to biological resources.

O-3-46

The comment states: "The DEIR should be revised to reflect accurately the estimated foraging behavior of the six species of concern evaluated in the DTR's aquatic-dependent wildlife analysis, and analyze how that data affects the DTR's conclusions regarding risks to aquatic-dependent wildlife from sediments at the Site and the determination of an appropriate baseline. The DEIR's baseline should also be revised to reflect existing conditions."

See response to comment O-3-4 regarding the existing conditions baseline. See Section 4.5 of the Draft PEIR for an assessment of potential project impacts to biological resources.

CEQA does not require the inclusion of the analysis requested by the commenter. The conclusions reached in the Draft PEIR are substantiated by project-specific analysis and reports.

O-3-47

The comment states: "2. Human Health Impairment

"Likewise, in the human health risk analysis, Regional Board staff assumed not only that fishing *could* occur at the Site—a facially erroneous assumption because strict security measures resulting from the shipyards' work for the U.S. Navy prevent *any* fishing at the shipyards—but also that each hypothetical subsistence angler at the shipyards would derive his or her entire daily protein source from fish caught within the shipyard (161 g/day), every day for 70 years (for carcinogens),[1] and would always eat the entire fish or shellfish (including skin/shell, organs, eyes, etc.), containing the maximum measured pollutant concentrations. Ginn Report, at 80-81; Expert Report of Brent L. Finley, Prepared in Regards to the California Regional Water Quality Control Board's Draft Technical Report for Tentative Cleanup and Abatement Order No. R9-2011-0001 (San Diego Bay) (March 11, 2011) ('Finley Report'), at 9, 22."

The comment pertains to documents other than the Draft PEIR. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein; therefore, no further response is necessary.

O-3-48

The comment states: "Given that absolutely no fishing occurs at the shipyards, and since the Administrative Record is devoid of evidence that there has *ever* been *any* fishing at the shipyards (*see* Alo Depo., at 88:4-93:18), it is highly conservative (to put it mildly) to assume that anglers will fish at the shipyards, much less that any angler would do so every day for 70 years and derive all of his or her protein requirements from fish caught at the shipyards. Because this hypothetical assumption bears no relationship to existing conditions at the Site, it cannot be used to inform the DEIR's environmental baseline relative to the effect of Site sediments on human health beneficial uses."

Draft PEIR discussion that relates to human health beneficial use is in the context of the water quality of the San Diego Bay. The EIR does not rely on an assumption that fishing occurs at the shipyards.

O-3-49

The comment states: "The DEIR should be revised to accurately describe the extent of fishing currently taking place at the Site, and analyze how that information affects the DTR's

[1] The DEIR uses an assumption of 30 years for non-carcinogens.

conclusions regarding risks to human health from sediments at the Site and the determination of an appropriate baseline. The DEIR's baseline should also be revised to reflect existing conditions."

See responses to comments O-3-4 and O-3-48.

O-3-50

The comment states: "3. Aquatic Life

"The DTR contends that aquatic life beneficial uses at the Site are impaired 'due to the elevated levels of pollutants present in the marine sediment at the Shipyard Sediment Site.' TCAO, at ¶ 14, DTR, at 14-1. But the results of the sediment investigation indicate that, although contaminants of concern and other pollutants are present in Site sediments in elevated concentrations relative to reference, they do not pose significant risks to aquatic life because they are not 'bioavailable' and many constituents do not 'bioaccumulate.'[1] NASSCO's May 26 Comments, at 8."

The comment pertains to documents other than the Draft PEIR. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein; therefore, no further response is necessary.

O-3-51

The comment states: "Risks to aquatic life were evaluated by sampling and assessing both benthic macroinvertebrates and fish. Ginn Report, at 12. Effects on benthic macroinvertebrates were assessed using a triad approach, involving the synoptic collection of data on sediment chemistry, toxicity, and benthic community structure, and effects on fish were assessed by comparing fish living at the Site to fish caught in reference areas in San Diego Bay. The results of these analyses showed little or no effects on aquatic life; in particular, the results of the sediment investigation confirmed that (1) amphipod toxicity is absent from all but one station at the NASSCO Shipyard (out of 15 monitored), with only

[1] As explained above, "bioavailability" is a measure of the potential for a chemical to enter into ecological or human receptors. Similarly, "bioaccumulation" refers to the accumulation of substances, such as pesticides or COCs, in an organism. Bioaccumulation occurs when an organism absorbs a toxic substance at a rate greater than that at which the substance is lost The DTR cites a finding that "bioaccumulation is occurring at the shipyard" as one basis for concluding that aquatic life at the Site is impacted. DTR, at 14-1, 19-1. But the DTR's conclusion that Site sediments impact aquatic life is overly-conservative, since substances may bioaccumulate in laboratory tests (such as those underlying the DTR's bioaccumulation finding), but not adversely affect the benthic community, and because not all shipyard chemicals were found to bioaccumulate. DTR, at 19-1; Barker Depo, at 98:19 – 98:22. For many COCs, including all primary COCs, the laboratory bioaccumulation test was the only test showing any statistical relationship between the chemicals at the Site and a biological response to a particular chemical, suggesting that the concentrations observed in the *Macoma* laboratory testing did not accurately predict adverse responses in consumer organisms at the Site. Barker Depo, at 95:22 – 98:16. Moreover, other COCs, including cadmium, chromium, nickel, selenium, silver, and PPT showed no statistical relationship with biological effects and also did not bioaccumulate in laboratory tests. DTR, at Table 20-1. Similarly, bioaccumulation relationships for arsenic and zinc, although statistically significant, were each controlled by only a single data point. DTR, at 19-1.

one station showing any significant difference from reference conditions, and even then the station was only 3% below the statistical reference range equal to one of the reference stations; (2) measurements of four indices of the health of benthic macroinvertebrate communities are not different from reference conditions[1]; (3) fish show no elevation in significant liver lesions or other abnormalities related to chemical exposures at the Site; and (4) predicted exposures of aquatic-dependent wildlife fall below the thresholds for which adverse effects are expected. Ginn Report, at 15-16. Likewise, the direct measurements of biological conditions, which Regional Board staff acknowledge 'are the most important since they are direct measures of what is being protected,' reveal that only a minimal fraction of stations at NASSCO do not meet reference conditions. Alo Depo., at 228:23 – 229:3; Ginn Report, at 49. Put another way, of 42 total toxicity tests conducted (excluding NA22, which is not being addressed under the Project), 37 tests showed conditions at NASSCO were as protective as background, with respect to toxicity."

The comment pertains to documents other than the Draft PEIR. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein; therefore, no further response is necessary.

O-3-52

The comment states: "Remarkably, even the DTR's overly conservative analysis[2] acknowledges that (1) benthic communities are equivalent to reference conditions at 14 of 15 stations in the NASSCO leasehold, with the only "moderately" impacted station located at the mouth of Chollas Creek; (2) amphipod toxicity was found at only 1 of 15 stations at NASSCO, and for that station the survival rate, at 70%, was still only 3% below the statistical reference range and equal to one of the reference stations; (3) toxicity to sea urchins was not found at any of the 15 stations at NASSCO; and (4) toxicity to bivalves was found at only 5 of 15 stations at NASSCO. DTR, at Tables 18-8 and 18-13. Yet, despite these favorable toxicity results and contrary to current regulatory guidance, the DTR simply

[1] The health of benthic macroinvertebrate communities at the Site was measured by comparing four benthic macroinvertebrate metrics at the NASSCO Site with the 95% prediction limits for the reference pool selected by Regional Board staff. The four metrics evaluated were (1) the benthic response index for Southern California embayments (BRI-E), which is a quantitative index that measures the conditions of marine and estuarine benthic communities by reducing complex biological data to single values; (2) total abundance, which measures the total number of individuals identified in each replicate sample; (3) total taxa richness, which measures the number of taxa identified in each replicate sample; and (4) Shannon-Weiner Diversity, which is a measure of both the number of species and the distribution of individuals among species, with higher values indicating that more species are present or that individuals are more evenly distributed among species. DTR, at 18-20. Of the 60 individual comparisons between Site conditions and reference conditions (15 stations and 4 metrics), there were only three significant differences from the reference pool. Ginn Report, at 31.

[2] The DTR framework is overly conservative and fundamentally flawed because it concludes that adverse effects on benthic macroinvertebrates are "likely" or "possible" whenever sediment chemistry is characterized as "high"—regardless of whether significant sediment toxicity or adverse effects on benthic communities are also observed. DTR, at Table 18-4. As a result, the chemistry line of evidence unilaterally trumps the others, causing the TCAO and DTR to reach conclusions that are not technically justified. Ginn Report, at 48. Regional Board staff's framework is further biased by its lack of a "no" effects category—meaning that stations will be characterized as having at least "low" levels of effects, even where the results are indistinguishable from reference conditions—contrary to methods published by others, including the State Water Resources Control Board. *Id.*

assumed "possible" or "likely" effects whenever chemical and biological indicators disagreed, resulting in seven stations at NASSCO being incorrectly characterized as having either "possible" or "likely" impacts on benthic macroinvertebrates. For example, NA19 was characterized as "likely" impaired, even though six of the seven lines of direct biological evidence showed no significant differences from reference conditions. Alo Depo., at 263:22 – 265:17. The DTR's conclusions of adverse effects to aquatic life beneficial uses does not accurately reflect existing conditions and cannot be used to form the DEIR's baseline."

The comment pertains to documents other than the Draft PEIR. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein; therefore, no further response is necessary. Refer to response O-3-4 for a discussion of the Draft PEIR baseline.

O-3-53

The comment states: "C. The Environmental Setting Fails to Account For Pre-1960 Activities Contributing to Existing Conditions at the Site

"In the description of Project Site Conditions for the Hazards and Hazardous Materials analysis, the DEIR describes wastes allegedly generated as a result of shipyard operations conducted by NASSCO since at least 1960, and BAE Systems (and its predecessor) since 1979. DEIR, at 4.3-1, 2. But the DEIR completely ignores pre-1960 activities that caused releases of hazardous materials to the Site, even though the DTR and the Administrative Record include detailed information regarding a variety of industrial operations conducted at the Site going back to the turn of the century, by a multitude of entities."

An EIR must identify and focus on the significant environmental effects of the proposed project. Because the purpose of an EIR is to assess the project's effects on the existing environment, an EIR need not go into extensive detail with regard to the history of the project site.

O-3-54

The comment states: "It is well-documented that the City of San Diego leased properties at or in the vicinity of the Site to numerous industrial and commercial tenants beginning in approximately 1900—well before NASSCO existed or operated at the Site. San Diego Unified Port District Report, Historical Study San Diego Bay Waterfront Sampson Street to 28th Street (2004) (SAR159392 – 94); City of San Diego, Report for the Investigation of Exceedances of the Sediment Quality Objectives at National Steel and Shipbuilding Company Shipyard (2004) (SAR157095 – 167). These former tenants included operators in heavy industries such as tire manufacturing, lumbering, fish-packing and shipbuilding, and operated at times when environmental regulations were minimal or non-existent. There is ample record evidence that these entities contributed significant contamination to the Site. *See e.g.*, *id.*; Letter from City Port Director to Anthony Martinolich (1951) (SAR175155) ('[a]pparently your sandblasters are dumping the used sand in the bay in your water area.'); Documents Evidencing Transformer Spill/PCB discharge by Lynch Shipbuilding at foot of 28th Street (1943) (PORT05994 -06007) ('hot oil from the transformer was sprayed over many square feet of deck')."

The comment provides information about the history of the NASSCO shipyard site. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary. See response to comment O-3-53.

O-3-55

The comment states: "Accordingly, the DEIR must be revised to reflect the waste discharges to the Site that resulted from pre-1960s activities."

See response to comment O-3-53. No change to the Draft PEIR is warranted.

O-3-56

The comment states: "D. The DEIR Provides No Support For Its Assumptions That 15% of the Sediment Will Be Classified as 'Hazardous' Material

"The DEIR assumes that 15% of the sediment to be dredged under the proposed Project will be classified as "hazardous" and require transport to a Class I hazardous waste facility. E.g., DEIR, at 4.1-12. This is presented as a "worst-case" scenario. Id. The DEIR does not provide any support for this assumption, however, and therefore must be revised to inform the public as to the basis of the assumption. If none of the dredged sediment is 'hazardous,' that would upset the stated rationale for incurring the environmental impacts and other costs associated with the proposed plan to dredge 143,000 cubic yards of sediment from the Bay. If, after dredging, more than 15% of the material is determined to be 'hazardous,' this would disturb the remaining environmental impact analyses for a variety of impact areas, including but not limited to impacts associated with truck trips required to transport the material to a hazardous waste facility."

The 15 percent is an estimate based on available information and the collective consideration of the San Diego Water Board staff and a representative of the shipyards, as reflected in a discussion held at on an on-site meeting on December 22, 2010. More specific information is not necessary, as the project description provides sufficient detail to assess impacts, identify mitigation measures, and to provide for meaningful public review and comment. Future decisions and implementing actions following certification of the PEIR and approval of the project will be subject to subsequent environmental review pursuant to CEQA. It is further noted that 1) the comment does not provide evidence that contradicts this estimate, and 2) the California Department of Toxic Substances Control reviewed the Draft PEIR, submitted comments, and had no comments regarding this estimation of hazardous material.

O-3-57

This comment is a continuation of comment O-3-56. See response to comment O-3-56.

O-3-58

The comment states: "IV. THE DEIR'S DESCRIPTION OF THE PROJECT'S PROPOSED SAND COVER REMEDY MUST BE REVISED TO CLARIFY THAT AN ENGINEERED SAND CAP IS NOT REQUIRED

"While the proposed Project calls for dredging as the primary remedial tool, the Project Description indicates that '[d]ue to the presence of infrastructure, such as piers and pilings, dredging is constrained in several locations within the project site. Therefore, contaminated areas under piers and pilings will be remedied through subaqueous, or in situ, clean sand cover. In situ clean sand cover is the placement of clean material on top of the contaminated sediment.' DEIR, at 3-7. Elsewhere, the DEIR indicates that approximately 2.4 acres of the remedial areas 'will be covered with a layer of clean sand to contain contaminated sediments.' DEIR, at 4.2-14. NASSCO recognizes that clean sand cover is part of the TCAO proposed by the Cleanup Team and evaluated in the DTR; however, certain language in the DEIR and its proposed mitigation measures must be clarified in order to ensure that the proposed remedy is not confused with the separate and significantly more costly and technologically challenging (and likely infeasible) remedy of an engineered sand cap. Such clarification is necessary in order to ensure that the Project Description in the DEIR accurately reflects the remediation that is being proposed by the TCAO and DTR.[1] See San Joaquin Raptor, 27 Cal. App. 4^{th} at 730 ('an accurate project description is necessary for an intelligent evaluation of the potential environmental effects of a proposed activity.'); CEQA Guidelines § 15124 (EIR must include 'description of the project's technical … characteristics, considering the principal engineering proposals if any…')."

The clean sand cover under piers is included in the TCAO and in the project description for the Draft PEIR. As specified in Mitigation Measures 4.2.7 and 4.2.8, the clean sand covers will be designed and installed to reduce the potential for sediment and contaminants to be released into the water column, and may include separate subcomponents for isolation. The intent of the clean sand cover is to provide a permanent feature that is protected against erosion. A temporary cover that would continuously erode would not be consistent with the intent and requirements of the TCAO. As the placement of sand will be a discharge of fill to cover existing contaminated sediments, it is imperative that an engineered design of the placement take place to ensure mitigation measures be utilized that prevent the suspension of contaminated sediments in the water column, in addition to maintaining turbidity levels during sand placement at levels that protect beneficial uses. At no place in the Draft PEIR do

1 The sand cover is described as a mitigation measure (number 4.2.7), but it is more than that, as it is a critical component of the Project's proposed remediation strategy and thus must be detailed as part of the Project description in the DEIR.

mitigation measures indicate that there will be an engineered cap, and therefore the level of description and mitigation measures are appropriate given the activity.

O-3-59

The comment states: "Although the DEIR correctly refers to a "clean sand cover" rather than an engineered sand 'cap,' certain language in the DEIR could be misconstrued to refer to an engineered cap, and Mitigation Measure 4.2.7 includes requirements commensurate with an engineered cap. For example, the DEIR refers to the 'design and install[ation]' of the sand cover, in contrast to the DTR's description of the 'placement of a sand layer' in under-structure remedial areas. Compare DEIR, at 4.2-14 with DTR, at 30-4. In addition, Mitigation Measure 4.2.7 proposes detailed requirements regarding the 'design' of the sand cover, including requirements that it 'prevent substantial perturbation … of underlying contaminated sediments,' 'physically isolate the sediments from benthic or epigenetic organisms,' 'stabilize the contaminated sediments,' and include 'final engineering plans.' DEIR, at 4.2-20. This measure includes the likely requirement for a surficial layer of protective armor rock, along with, potentially, an intervening layer of filter gravel and brick, among other things that would be required in an engineered cap."

No language in the Draft PEIR or mitigation measures includes a "requirement for a surficial layer of protective armor rock, along with, potentially, an intervening layer of filter gravel and brick." Please see response to comment O-3-58.

O-3-60

The comment states: "In light of the above, the DEIR should be revised to make clear that the TCAO contemplates a sand cover rather than an engineered sand cap in the under-pier remedial areas, and Mitigation Measure 4.2.7 should be modified accordingly. The distinction is significant with respect to the proposed Project's economic and technological feasibility analysis. As explained below, Mitigation Measure 4.2.7 is estimated to add approximately $7,000,000 in additional costs relative to the clean sand cover remedy contemplated by the parties in the TCAO/DTR process. Memorandum Regarding Cost Implication of Mitigation Measures Described in the Draft Environmental Impact Report for the San Diego Shipyards Sediment Cleanup Project, San Diego California, submitted concurrently herewith (the 'Anchor Comments')."

The project description and mitigation measures in the Draft PEIR include the placement of a clean sand cover and do not include an engineered sand cap in the under-pier remedial areas. Please see response to comment O-3-58.

O-3-61

The comment states: "V. THE DEIR PROPOSES INFEASIBLE MITIGATION MEASURES

"A. CEQA Mitigation May Not Be Adopted Unless It Is 'Feasible'

"Mitigation may not be adopted under CEQA unless it is 'feasible,' which CEQA defines as 'capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.' CEQA Guidelines § 15364. Mitigation is 'legally infeasible' if its adoption is beyond the powers conferred by law on the agency, or prohibited by statutes governing the agency. *Kenneth Mebane Ranches v Superior Court,* 10 Cal. App. 4th 276, 291 (1992); *Sequoyah Hills Homeowners Ass'n v City of Oakland,* 23 Cal. App. 4th 704, 715-16 (1993)."

The comment is introductory to the following comment (O-3-62) and does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-62

The comment states: "CEQA does not provide agencies with independent authority to mitigate environmental impacts. Rather, '[i]n mitigating or avoiding a significant effect of a project on the environment, a public agency may exercise only those express or implied powers provided by law other than this division.' CEQA § 21004; *see also* CEQA Guidelines § 15040. Accordingly, the Regional Board may not adopt any mitigation measures for the proposed Project unless those measures are authorized by the Porter Cologne Act or other applicable statutory authority beyond CEQA. To the extent mitigation contemplated by the DEIR does not satisfy the Porter Cologne Act, it is legally infeasible under CEQA and may not be adopted."

Preparation of a Programmatic EIR to evaluate the potential impacts associated with the cleanup options, and the development of mitigation measures to address such identified impacts does not violate section 13360 of the Water Code or any other applicable regulations.

O-3-63

The comment states: "B. New Mitigation Proposed In The DEIR Does Not Satisfy Resolution 92-49; Therefore It May Not Be Adopted

"1. The TCAO's Cleanup Levels Must Be Evaluated For Economic Feasibility Under Resolution 92-49

"The Regional Board's authority to issue cleanup and abatement orders is supplied by Water Code section 13304, (see DEIR, at 3-3), which is part of the Porter Cologne Act, Water Code sections 13000, et seq., which sets forth California's water quality control laws. Regarding implementation of Water Code section 13304, the State Board issued Resolution 92-49. Among other things, Resolution 92-49 requires an analysis of cost-effectiveness and technological and economic feasibility in determining cleanup levels. Resolution 92-49, at 6-8 ('The Regional Water Board shall … ensure that dischargers shall have the opportunity to select cost-effective methods for … cleaning up or abating the effects [of wastes discharged and] … require the discharger to consider the effectiveness, feasibility, and relative costs of applicable alternative methods for investigation, cleanup and abatement.'). The Regional Board is also required to evaluate costs pursuant to Water Code section 13307."

Comment is introductory to other comments in the letter and does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-64

The comment states: "The DTR explains that the 'economic feasibility' requirement under Resolution 92-49 'refers to the objective balancing of the incremental benefit of attaining more stringent cleanup levels compared with the incremental cost of achieving those levels,' and 'does not refer to the discharger's ability to pay the costs of a cleanup.' DTR, at 31-1. In assessing economic feasibility under Resolution 92-49, the benefits of remediation are best expressed as the reduction in exposure of human, aquatic wildlife and benthic receptors to site-related contaminants of concern. *Id.*"

The comment is further introduction to the following comments and does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-65

The comment states: "Resolution 92-49 cites Water Code section 13307 as authorizing the State Board to adopt policies for Regional Boards to follow for the oversight of cleanup and abatement activities. Section 13307, in turn, mandates that the State Board's policies '*shall* include … [p]rocedures for identifying and utilizing the *most cost-effective* methods … for cleaning up *or abating the effects* of contamination or pollution.' Water Code § 13307(a)(3) (emphasis added). Water Code section 13267 likewise requires a costs-benefits analysis with regard to any 'technical or monitoring program reports' required by the Regional Board, providing specifically that '[t]he burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports.' This provides further confirmation that the cost of any measures imposed on dischargers by the Regional Board must have a reasonable relationship to the anticipated benefits to be obtained."

Comment further describes an opinion related to the cost-benefit analysis, but does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-66

The comment states: "2. New Mitigation Requirements In The DEIR Would Increase Site-Wide Remediation Costs By Approximately $11.8 to $18.3 Million

"As set forth in the concurrently submitted Anchor Comments, an expert assessment of the mitigation proposed in the DEIR indicates that new measures or requirements not discussed in the TCAO/DTR will increase Site-wide remediation costs by an estimated $11.8 to $18.3 million. The critical changes or additions to the cleanup requirements that are proposed in the DEIR, and associated increases in remediation costs, are summarized in the chart below, and detailed further in the Anchor Comments.[1] These measures were not evaluated in the TCAO/DTR, and were not included in the DTR's economic feasibility analysis for the TCAO."

Mitigation Measure(s)	Probable Minimum Cost	Most Probable Cost	Probable Maximum Cost
Automatic turbidity monitoring systems (MMRP 4.2.1)	$ 500,000	$ 800,000	$ 1,000,000
Double silt curtain enclosure (MMRP 4.2.2)	$ 250,000	$ 400,000	$ 500,000
Bucket additions and controls (closure switches, Clam Vision TM) (MMRP 4.2.2)	$ 250,000	$ 400,000	$ 500,000
Air Curtains (MMRP 4.2.2)	$ 300,000	$ 400,000	$ 500,000
Complete enclosure of dredge AND barge (MMRP 4.2.3)	$ 1,500,000	$ 1,750,000	$ 2,000,000
Design and construction of permanent cap instead of sand cover (MMRP 4.2.7)	$ 5,000,000	$ 6,000,000	$ 7,000,000
Hydraulic placement of cap material (MMRP 4.2.8)	$ 1,500,000	$ 1,750,000	$ 2,000,000
Restriction on haul times (MMRP 4.4.1)	$ 2,000,000	$ 3,200,000	$ 4,000,000
Biological monitoring for sea turtles, terns, etc. (MMRP 4.5.7 -4.5.9)	$ 250,000	$ 400,000	$ 500,000
Use of engine catalysts, low-NOx, and alternative fuels (MMRP 4.6.8 - 4.6.10)	$ 100,000	$ 180,000	$ 200,000
Use of special deodorizing additives (such as Simple Green) (MMRP 4.6.15)	$ 50,000	$ 80,000	$ 100,000
Total Estimated Cost Increase from Mitigation Measures	$ 11,700,000	$ 15,360,000	$ 18,300,000

The comment introduces a table that summarizes the commenter's estimate of the costs of mitigation. The comment does not contain any substantive statements or questions about the

1 NASSCO takes issue with the necessity or feasibility of many of these measures, as set forth in the Anchor Comments and elsewhere in this letter. NASSCO also seeks clarification as to the scope or application of certain of these measures, as also reflected elsewhere in NASSCO's comments. Such clarification (and corresponding revision to the DEIR and its discussion of mitigation measures), or the removal of certain mitigation, could alter the above cost estimates.

Draft PEIR or the analysis therein. Therefore, no further response is necessary. Please see response to Comment O-3-158.

O-3-67

The comment states: "3. The New Mitigation Has Not Been Evaluated Under Resolution 92-49, And Is Not Economically Feasible Under Resolution 92-49

"The aforementioned mitigation requirements have not been assessed for economic feasibility under Resolution 92-49 or Water Code sections 13267 and 13307, and the TCAO and DTR's economic feasibility determinations did not incorporate the additional $11.8 to $18.3 million in estimated remedial expenses. Because these costs have not been assessed for compliance under Resolution 92-49 or Water Code sections 13267 and 13307, they may not be imposed under the Porter Cologne Act. As a result, the Regional Board lacks authority to impose them under CEQA because they are 'legally infeasible,' and they may not be adopted by the Regional Board. *Sequoyah Hills*, 23 Cal. App. 4th at 715-16; *Kenneth Mebane Ranches,* 10 Cal. App. 4th at 291; CEQA Guidelines § 15364; CEQA § 21004."

The comment summarizes the commenter's cost estimation of mitigation measure contained in the Draft PEIR. The comment does not contain any specific or substantive statements or questions about the Draft PEIR or the analysis therein. Under CEQA, lead agencies must avoid or reduce the impacts of a proposed project by adopting feasible project alternatives or mitigation measures. Please see response to comment O-3-158.

O-3-68

The comment states: "Nor could these mitigation measures pass muster under Resolution 92-49 had they been evaluated. The DTR's economic feasibility analysis compared incremental benefits of further cleanup, expressed in terms of exposure reduction to target receptors, with the incremental cost of achieving those benefits, and determined that the degree of exposure reduction does not justify the incremental cost of such reductions beyond approximately $33 million in total cleanup costs. DTR, at 31-2 – 31-3. Even before the mitigation requirements proposed in the DEIR, the maximum estimated cleanup costs totaled approximately $60,345,500, well beyond the point at which the DTR concluded any incremental benefit is not supported by the additional costs. Resolution 92-49 certainly will not permit an additional $11.8 to $18.3 million in remediation costs, given that the additional, significant costs would have such a minimal degree of environmental benefit. Accordingly, the additional mitigation requirements proposed in the DEIR may not permissibly be adopted by the Regional Board under Resolution 92-49. Stated differently, to the extent that the Regional Board determines that the additional mitigation requirements are necessary to achieve the TCAO's cleanup levels (which NASSCO disputes), then those cleanup levels are economically infeasible and must be revised. Accordingly, Resolution 92-49 precludes adoption of the above measures, as does Water Code section 13307."

Please see response to comment O-3-67.

O-3-69

The comment states: "It is also worth noting that the costs of the mitigation requirements proposed in the DEIR, which increase the total Project cleanup costs to an estimated $72,145,500 to 78,645,500, also render implementation of the Project economically infeasible under CEQA. Given their estimated cost, many of the proposed individual mitigation measures, including each of those set forth in the chart above, are also economically infeasible under CEQA. *See* CEQA Guidelines § 15364 (feasibility analysis under CEQA includes consideration of 'economic factors')."

The comment contains further description of the costs associated with mitigation included in the Draft PEIR. The comment does not contain any specific or substantive statements or questions about the Draft PEIR or the analysis therein. Under CEQA, lead agencies must avoid or reduce the impacts of a proposed project by adopting feasible project alternatives or mitigation measures. PRC 21002-21002.1. "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social and technological factors. Cost in and of itself is not necessarily a determination of a measure's "feasibility" under CEQA. The purpose of including mitigation measures in an EIR is to identify mitigation measures that could minimize significant adverse impacts.

O-3-70

The comment states: "VI. SIMILAR SITES MUST BE TREATED SIMILARLY, BUT OTHER SEDIMENT REMEDIATION PROJECTS HAVE NOT BEEN SUBJECTED TO CEQA REVIEW AND MITIGATION

"Resolution 92-49 also provides that the 'Regional Water Board *shall* … prescribe cleanup levels which are *consistent* with appropriate levels set by the Regional Water Board for analogous discharges that involve similar wastes, site characteristics, and water quality considerations.' (emphasis added). *See also* Barker Depo., at 345:12-345:17 (recognizing that one goal of Resolution 92-49 is to ensure that the Regional Boards treat similar sites similarly). Constitutional principles of due process and equal protection likewise require both fundamental fairness and similar treatment of similarly situated persons subject to the same legislation or regulation. U.S. Const. amend. XIV, §1; Cal. Const. art. I, §§ 7, 15."

The comment is introductory to other comments in the letter and does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-71

The comment states: "Contravening these principles, the Project appears to be the first sediment remediation project in San Diego Bay that the Regional Board has subjected to CEQA review and mitigation. The Regional Board imposed CEQA review notwithstanding that the Project is 'categorically exempt' from CEQA, as explained below, and despite the DEIR's concession that an average of 245,000 cubic yards of sediment are dredged annually from San Diego Bay, which nullifies the Cleanup Team's prior position that 'unusual circumstances' required CEQA review because the Project called for the dredging of 143,000 cubic yards of sediment. Because the Regional Board's unprecedented imposition of CEQA review is not consistent with the Regional Board's treatment of similarly situated sites in San Diego Bay, and because, among other things, the DEIR is proposing mitigation that would add approximately $11.8 to $18.3 million to the cost of cleanup, the Regional Board's review of the Project under CEQA violates Resolution of 92-49 and the constitutional mandates of due process and equal protection. Notably, most of these measures have not been required for other cleanups in San Diego Bay (or elsewhere), including for the Campbell Shipyard cleanup, the most recent environmental sediment remediation project in San Diego Bay."

The comment states that the Water Board's imposing CEQA upon the project and the requirement to prepare an EIR is not consistent with other similar projects in San Diego Bay. The Water Board, as the Lead Agency under CEQA, makes the determination as to what level of environmental review is appropriate. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-72

The comment states: "VII. THE IMPOSITION OF NEW MITIGATION THROUGH THE DEIR WOULD VIOLATE DUE PROCESS BECAUSE THE PARTIES HAVE NOT HAD THE OPPORTUNITY TO TAKE DISCOVERY ON THOSE REQUIREMENTS

"The DEIR's new mitigation requirements (if adopted) violate due process for the additional reason that they purport to alter the cleanup required under the TCAO and DTR, but were first imposed after the close of discovery in the TCAO proceeding, precluding the opportunity for the parties to take discovery regarding the new requirements. There is no question that due process mandates that discovery may be taken regarding the parameters of the TCAO and DTR; the Presiding Officer's February 18, 2010 Discovery Plan specifically states that the 'Designated Parties are entitled to the procedural and due process safeguards' provided by the state and federal constitutions, the California Administrative Procedure Act, and the California Code of Regulations."

Preparation of a Programmatic EIR to evaluate the potential impacts associated with the cleanup options, and the development of mitigation measures to address such identified impacts, does not violate any parties "procedural and due process safeguards provided by the state and federal constitutions, the California Administrative Procedure Act, or the California Code of Regulations." Further, CEQA is intended to be a transparent process by which information pertaining to project activities is openly addressed in a public forum.

The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-73

The comment states: "NASSCO, along with the City of San Diego, United States Navy, SDG&E, BAE Systems and Campbell Industries, previously made this very point in connection with their combined request for the discovery period to be extended to coincide with the CEQA process, so that the parties would retain the right to take discovery on any components of the TCAO/DTR (or their implementation) that might be affected by the CEQA review.[1]

The Cleanup Team agreed. SAR381340 ('Because the CEQA process must determine the timing of the San Diego Water Board's consideration of the tentative CAO and DTR … the Cleanup Team does not believe there is any good reason not to integrate the timing of the remaining discovery deadlines with the CEQA process.'). But this request was denied by former Presiding Officer David King."

The comment is a statement further describing the discovery period and does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-74

The comment states: "Accordingly, to the extent the Regional Board desires to impose additional mitigation requirements introduced in the DEIR, it must reopen the discovery period to allow the Designated Parties to take discovery regarding same, and extend the comment period so that the parties may use the results of discovery to inform their comments."

Please see response to comment O-3-73.

[1] The parties' request stated: "Tying discovery deadlines to the CEQA process is logical because the 'project' will be better defined and explained through the CEQA process and in the resulting Environmental Impact Report ('EIR'). The Parties will not know whether or to what extent they are agreeable to the final CAO (and therefore, can waive discovery) until after the CEQA process has been completed, including the submission of public comments and responses by the Regional Board and an analysis of proposed mitigation measures. It therefore makes sense for the discovery period to coincide with the CEQA process, so that the parties may take any discovery they believe is necessary as a result of the CEQA process, or waive discovery entirely." SAR381342.

O-3-75

The comment states: "VIII. THE CUMULATIVE IMPACTS ANALYSIS FAILS TO IDENTIFY REASONABLY FORESEEABLE DREDGING PROJECTS IN SAN DIEGO BAY

"As noted, the DEIR indicates that between 1994–2005, 'an average of approximately 245,000 cubic yards of sediment was dredged from San Diego Bay each year,' including maintenance and environmental dredging, with an annual total as high as 763,000 cubic yards. DEIR, at 4-2. The DEIR further makes the '**conservative assumption** that two similar-sized dredging projects occur during the dredging operations at the project site.' DEIR, at 4.3-30 (emphasis added). The DEIR also 'anticipates that **regularly scheduled** maintenance dredging projects may occur in San Diego Bay over the next several years.' DEIR, at 4.2-25. These statements raise several concerns regarding the DEIR's cumulative impacts analysis, which applies across all environmental impact areas considered in the DEIR."

The comment states concerns with the Draft PEIR's cumulative analysis, but does not provide any specific comments, substantive statements, or questions about the analysis contained in the Draft PEIR. Therefore, no further response is necessary. Refer to responses O-3-76 through O-382 for further discussion of the cumulative analysis.

O-3-76

Comments O-3-76 through O-3-82 pertain to the cumulative impacts discussion in the Draft PEIR. Comment O-3-76 cites portions of the Draft PEIR that describe the assumptions about other dredging projects in the San Diego Bay used in the cumulative impact analysis throughout the Draft PEIR.

The comment states: "First, given (i) that approximately 245,000 cubic yards of sediment are dredged from the Bay each year; (ii) that we can conservatively assume that two dredging projects of approximately 143,000 cubic yards each will occur during Project implementation; and (iii) that maintenance dredging in the Bay is 'regularly scheduled,' the DEIR's failure to identify a single anticipated dredging project is unsupportable. The DEIR should identify *any* dredging projects currently underway or scheduled to take place in the next ten years, regardless of whether they are maintenance *or* environmental dredging projects, as well as any specific dredging projects that are reasonably foreseeable or probable at this time. The DEIR's statement that no 'specific environmental dredging projects have been identified' suggests that maintenance dredging projects have been identified, but were simply not disclosed. DEIR, at 4.3-30. This is improper."

The San Diego Water Board Cleanup Team did not identify future specific maintenance projects for inclusion in the Draft PEIR. The cumulative analysis was based on historical dredging records for the 11-year period from 1994 to 2005, which showed an average of approximately 245,000 cy of material dredged per year. Since no specific future maintenance or environmental dredging projects were identified, the use of historical information is appropriate for an estimation of the amount of dredging that could be expected to occur each year. No changes to the analysis or conclusions of the Draft PEIR are warranted.

O-3-77

This comment states that the failure to identify any specific dredging project within the San Diego Bay is unsupportable given the magnitude of ongoing dredging projects, and further states that the Draft PEIR should identify dredging projects currently underway, scheduled, or reasonably foreseeable to take place within the next 10 years (maintenance or environmental remediation projects). Finally, the comment states that it is improper not to disclose maintenance dredging projects that have been identified in the Draft PEIR, citing page 4.3-30.

The proposed project is a limited-duration dredge, treatment, haul, and sand cover activity. The analysis also appropriately focuses on the cumulative impacts and not on attributes of other projects that are not relevant to or do not contribute to the cumulative impact. Also an EIR's discussion of cumulative impacts need not be at the same level of detail as is provided for project-specific effects. (CEQA Guidelines 15130(b)) A Lead Agency is not required to provide evidence supporting every fact underlying the EIR's evaluation of cumulative impacts, nor is an exhaustive analysis required (*Association of Irritated Residents v County of Madera* 2003).

The cumulative impacts analysis related to dredging projects is based on the total anticipated dredge volume within the San Diego Bay that would occur within the same time frame as the proposed project. It is possible to identify this amount based on historical records maintained by the San Diego Water Board, as stated on page 4.3-30: "San Diego Water Board maintenance and environmental dredging records for the 11-year period from 1994 to 2005 show an average of approximately 245,000 cy [cubic yards] of material dredged from the bay, with yearly ranges from 0 to 763,000 cy." It is not necessary to specifically identify maintenance dredging projects to conduct the cumulative impacts analysis, as the quantity of dredged material is the key factor in the potential overlapping impacts. Furthermore, maintenance dredging is an ongoing condition in the Bay, part of the "past, present, and foreseeable future" projects.

The cumulative impacts discussion in the Draft PEIR is based on a list of anticipated landside projects as well as anticipated dredging activities. Due to the relatively short-term and intermittent nature of maintenance dredging activities within the Bay, the approach used allows reasonable and meaningful analysis of the cumulative effects. The analysis also appropriately focuses on the cumulative impacts and not on attributes of other dredging activity in the Bay, that are not relevant to or do not contribute to the cumulative impact. Cumulative dredging activity is described in sufficient detail to assess cumulative impacts, identify the need for mitigation measures, and to provide for meaningful public review and comment.

O-3-78

This comment states that the Draft PEIR should explain the steps taken to identify "probable" dredging projects, and to make any schedule of regularly scheduled maintenance dredging projects public. Further, the comment states that the Draft PEIR should indicate the extent to which other dredging projects would involve contaminated sediment, and whether eelgrass or other sensitive biological communities may be located in the dredged areas. Finally, the comment requests documentation or information supporting the assertions on page 4.1-31 in the Draft PEIR that the location and timing of future dredging and staging activity is not known and that maintenance dredging projects in the San Diego Bay do not typically occur simultaneously.

Probable future maintenance dredging projects were based on the records from the past 11 years provided by the San Diego Water Board Cleanup Team. Maintenance dredging is typically conducted on an as-needed basis; therefore, it is difficult or impossible to predict the timing that various areas within the Bay will require dredging. The statement in the Draft PEIR that maintenance dredging projects in the San Diego Bay do not typically occur simultaneously is based on records from the past 11 years. Refer to response O-3-77 regarding the appropriate characterization of cumulative maintenance dredging activity in the Bay. Cumulative dredging activity is described in sufficient detail to assess cumulative impacts, identify the need for mitigation measures, and to provide for meaningful public review and comment.

Projects that propose to discharge dredge or fill material into a water of the United States, must get a Clean Water Act section 401 Water Quality Certification and/or Waste Discharge Requirements from the San Diego Water Board and other environmental permits/ authorizations. This places the San Diego Water Board in a position to implement Mitigation Measure 4.2.14 to coordinate dredging projects to ensure that major projects are not conducted simultaneously.

O-3-79

This comment states that the Draft PEIR should state whether the San Diego Water Board has conducted CEQA review for previous dredging projects and whether it intends to conduct CEQA review for future dredging projects, and states that the Draft PEIR does not mention CEQA review of future projects. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. CEQA does not require that the Draft PEIR include a comprehensive list of all previous dredging activities or a statement relating to the CEQA review of such activities.

Projects that propose to discharge dredge or fill material into a water of the United States, must get a Clean Water Act section 401 Water Quality Certification and/or Waste Discharge Requirements from the San Diego Water Board and other environmental permits/ authorizations. CEQA review is a required for issuance of a Certification of Water Quality and Waste Discharge Requirements. CEQA review has been conducted for the referenced previous dredging projects that required issuance of a Certification of Water Quality or Waste Discharge Requirements. The Draft PEIR states on page 4.2-25 that "Implementation of Mitigation Measure 4.2.14, *and compliance with the applicable regulatory permits*, would reduce adverse cumulative effects to water quality to a less than significant level" (emphasis added). The San Diego Water Board is not expected to function as the CEQA Lead Agency for most dredging projects, but it does have permitting authority and the ability to condition permits with respect to avoiding scheduling conflicts and cumulatively additive impacts.

O-3-80

This comment states that the Draft PEIR should include a thorough analysis of any specific or reasonably anticipated dredging projects (maintenance or environmental) that will occur during the next ten years, asserting that these other dredging projects are "unlikely to be reviewed under CEQA." The assertion that other dredging projects would not be reviewed under CEQA is faulty (refer to response O-3-79), as CEQA review is required for all dredging activities requiring issuance of a Clean Water Act section 401 Certification or Waste Discharge Requirements from the San Diego Water Board. As stated on page 4.5-61, "The San Diego Water Board has approval authority over dredging activities pursuant to section 401 of the CWA." The Draft PEIR relies heavily on the comprehensive information contained within the San Diego Bay Integrated Natural Resources Management Plan (INRMP)[1] for the analysis relating to biological resources (cited on page 4.5-1), particularly with respect to the cumulative context. The INRMP is a "long-term, collaborative strategy for managing the Bay's natural resources, and the primary means by which the Navy and Port jointly plan natural resources work in San Diego Bay. It guides stewardship and compliance with environmental laws, while supporting the ability of the Navy and the Port to accomplish their mission-related work." (June 2007 Draft INRMP, page 1-1). The Draft PEIR relied on both the adopted INRMP (dated 1999, adopted in 2002) and the June 2007 Draft update to the plan. The June 2007 Draft INRMP includes a table summary of existing and potential dredging projects since 1988 (Table 5-1, page 5-8). The INRMP is referenced into the PEIR, and the cumulative impact assessment for biological resources follows the suggested guidelines on page 5-70 (Section 5.5 Cumulative Impacts) of the June 2007 Draft INRMP. CEQA does not require a thorough analysis of all cumulative projects in the Draft PEIR; rather, it requires an analysis of those effects that may be compounded by the project. The disclosure of the anticipated volume of dredged materials suffices to evaluate cumulative effects from the project.

[1] U.S. Department of the Navy, Southwest Division (USDoN, SWDIV). 1999. San Diego Bay Integrated Natural Resources Management Plan, and San Diego Unified Port District (Port) Public Draft. September 1999. San Diego, CA. Prepared by Tierra Data Systems, Escondido, CA. Adopted in 2002.

O-3-81

This comment states that the Draft PEIR should focus particularly on the anticipated combined effects of dredging on eelgrass communities and eelgrass-reliant marine life. The distribution of eelgrass communities throughout the Bay is described in general on page 4.5-10 of the Draft PEIR. Implementation of the Southern California Eelgrass Mitigation Policy (SCEMP), as proposed in the Draft PEIR and required by the resource agencies, addresses the potential temporal and fragmentary impacts of the proposed project by ensuring that replacement habitat is adequately connected (refer to Section 4.5.5 of the Draft PEIR). The SCEMP was adopted to standardize the approach to eelgrass mitigation; according to the INRMP, eelgrass habitat within the Bay is thought to be increasing as a result of conservation efforts.[1] The analysis of the additive effects of the proposed dredging and other dredging projects in the Draft PEIR is sufficient without including those details requested by the commenter.

O-3-82

The comment questions the authority of the San Diego Water Board to coordinate monitoring efforts and data with other dredging projects in the Bay and to take other actions intended to address potential cumulative impacts. Any dredging project that requires a Federal Clean Water Act permit (Section 10, 404, etc.) requires a Clean Water Act section 401 Certification from the San Diego Water Board. Dredging projects may also require Waste Discharge Requirements from the San Diego Water Board. As stated on page 4.5-61 of the Draft PEIR, "The San Diego Water Board has approval authority over dredging activities pursuant to section 401 of the CWA." The comment also states that the Draft PEIR for the proposed project may be the only opportunity to assess cumulative impacts of dredging projects throughout the Bay. Refer to response O-3-79 for a discussion on the CEQA clearance requirements for other dredging projects. The information requested by the commenter is not required to be included pursuant to CEQA and is not necessary for analysis of project impacts.

The comment further states that the San Diego Water Board ought to be able to make information about future projects available. This statement is erroneous, as permitting occurs only after an application has been received. Active applications for permits and approval actions are available for public review on the San Diego Water Board website. A variety of agencies may serve as lead agency for dredging projects, including, but not limited to, the Port, the San Diego Water Board, and various cities.

O-3-83

Comments O-3-83 through O-3-100 focus on specific mitigation measures in the Draft PEIR.

[1] NMFS. 2009. 2008 San Diego Bay Eelgrass Inventory and Bathymetry Update. Presented to San Diego Unified Port District Environmental Advisory Committee. September 10, 2009. As cited in Appendix F of the Draft PEIR.

Comment O-3-83 states: "Set forth below are additional comments on various environmental impact analyses, mitigation measures and alternatives in the DEIR, to the extent these issues are not separately addressed. For the sake of brevity, comments pertaining to specific impact areas or mitigations addressed elsewhere in this letter generally are not reasserted here."

The comment is introductory to other comments in the letter. The San Diego Water Board has responded to the issues separately addressed as appropriate within the responses to those comments.

O-3-84

This comment states: "Water Code section 13360 provides in relevant part that '[n]o waste discharge requirement or other order of a regional board … shall specify the design, location, type of construction, or particular manner in which compliance may be had with that requirement, order, or decree, and the person so ordered shall be permitted to comply with the order in any lawful manner.' Contradicting Water Code section 13360, the proposed Project purports to dictate how the Site should be remediated to achieve the TCAO's cleanup levels. Because the Regional Board lacks authority to dictate how the cleanup levels are to be achieved, it may not adopt the proposed Project, which therefore is legally infeasible under CEQA."

Water Code section 13360 also states that: "(b) If the court, in an action for an injunction brought under this division, finds that the enforcement of an injunction restraining the discharger from discharging waste would be impracticable, the court may issue any order reasonable under the circumstances requiring specific measures to be undertaken by the discharger to comply with the discharge requirements, order, or decree."

The evaluation of specific remedial actions in the Draft PEIR does not constitute an action by the San Diego Water Board to dictate how to achieve cleanup levels. The project description states that "Remedial actions may include dredging, application of clean sand cover, and/or natural recovery depending upon a number of factors, including levels of contamination in the sediment and site accessibility." (Draft PEIR, page 3-5). The use of a Programmatic EIR is appropriate to evaluate the potential impacts of a variety of means to conduct cleanup. The remedial actions evaluated in the Draft PEIR were developed in consultation with the stakeholders, including the Shipyards, the Port, and the San Diego Water Board Cleanup Team. Refer also to response O-3-72.

O-3-85

The comment states: "The DEIR indicates that vessel traffic in San Diego Bay for maintenance dredging is similar to that required for the proposed Project. DEIR, at 4.1-9. To better assess cumulative impacts, the DEIR should provide a discussion of the vessel traffic typically encountered during recent maintenance dredging projects in the Bay, based on the volume of dredging that occurs."

With regard to the operation of vessel traffic during implementation of the proposed project dredging, the conditions would be very similar to those during maintenance dredging, which occurs regularly throughout the Bay. For example, a dredging project proposed in 2002 for deepening San Diego Harbor (referred to as the San Diego Harbor Deepening Project) included a barge with clamshell dredge and a support tug boat. Additional ocean-going tug boats were proposed to transport an estimated 260,000 to 890,000 cubic yards of dredge spoils for disposal (http://www.portofsandiego.org/north-embarcadero/documents/doc_view/1165-sdcdc-energy-requirements-and-conservation-potential-of-alternatives-and-mitigation-measures.html). The EIR/EIS for the Harbor Deepening project states that "Types of construction equipment that are typical of projects of this type include, but are not limited to dredging vessels, barges, a crew boat, and a survey boat." The equipment identified in the analysis (Table 6.1-1) includes one clamshell dredge, one support tug boat, and an oceangoing barge tug. The level of vessel traffic proposed for this project is comparable and does not warrant further analysis. The proposed project dredging will be implemented in a manner consistent with the past and future dredging projects in the Bay. No further analysis is required.

O-3-86

The comment states "The DEIR indicates that an alternative traffic mitigation measure is the diversion of 15 percent of the dredged sediment to an ocean disposal site, but that "ocean disposal has not been approved by the San Diego Water Board at this time." DEIR, at 4.1-24. Given that no form of remediation or disposal has yet to be approved by the Regional Board, the purpose of this statement should be explained."

Ocean disposal was identified as a mitigating measure to reduce the impact of truck traffic. Traffic modeling indicated that even with 15 percent of the dredged sediment diverted to ocean disposal, traffic impact to certain intersections was unacceptable. The alternative mitigation measure of rerouting traffic to the Civic Center Drive interchange was found to be effective. Once a more appropriate alternative was identified no further action has been taken to approve ocean disposal. This information was included to document that the ocean disposal was evaluated and was not found to be an effective method to reduce truck traffic associated with this project.

O-3-87

The comment states: "The DEIR uses the 2000 Highway Capacity Manual ('HCM') published by the Transportation Research Board, even though an updated edition was published in 2010. The Regional Board should explain its decision to use the 2000 manual, despite the availability of an updated version, and explain whether use of the 2010 HCM would affect the results of the DEIR's traffic analysis in any way."

The 2010 HCM was released in late 2010 and was not readily available to be used for this project. Major updates to the HCM such as an integrated multimodal approach to the analysis and evaluation of urban streets from the points of view of automobile drivers, transit passengers, bicyclists, and pedestrians are not anticipated to significantly change the results of the analysis.

O-3-88

The comment states: "The DEIR states that the I-5 Southbound Ramp/Boston Avenue intersection currently operates at LOS E during the p.m. peak hour, but the Draft Barrio Logan/Harbor 101 Community Plan Update acknowledges that this intersection currently operates at LOS F. The Regional Board should explain this discrepancy, as well as whether the results of the DEIR's traffic analysis would be affected in any way if this intersection is properly categorized as operating at LOS F."

The DEIR utilized traffic counts collected for the project in 2011; in comparison, the Draft Barrio Logan/Harbor 101 Community Plan Update utilized older volume estimates from a number of sources dating from 2003 to 2010. The recent, project -specific traffic counts used in the Draft PEIR are considered more representative of the current conditions. Traffic will be routed to the Civic Center Drive interchange to avoid the I-5 Southbound Ramp/Boston Avenue. As mitigated; the project will not impact this intersection; therefore, the current LOS (either E or F) will not be changed by the project.

O-3-89

The comment states: "The DEIR repeatedly refers to 'the City's performance criteria' or 'the City's significance criteria' without specifying which city is referred to (San Diego or National City), or which particular guidance document contains the referenced criteria. See e.g., DEIR, at 4.1-16, 4.1-25, Appx. B, at 39. The Regional Board should clarify which city's criteria is implicated, and cite to the particular document containing the criteria that were relied upon."

As defined in the list of acronyms, "the City" refers to the City of San Diego. The City of National City is always referenced by the full name. The methodology section in Section 4.1.4.1 of the Draft PEIR includes references to the significance criteria used (e.g., "Roadway segments were analyzed on a daily basis by comparing the ADT volume to the City of San Diego Proposed LOS Standards – Street Segment Average Daily Trip Thresholds for Staging Areas 1 through 4. The City of National City has amended the SANTEC roadway capacities, and these are analyzed separately for Staging Area 5." Draft PEIR pg 4.1-10). The traffic study (Appendix B of the Draft PEIR) introduction states: "This traffic study has been prepared in accordance with the methodologies and procedures outlined in the City of San Diego *Traffic Impact Study Guidelines*, San Diego Traffic Engineers' Council (SANTEC) *Traffic Impact Study Guidelines*, the Highway Capacity Manual 2000 (HCM) published by the Transportation Research Board, and applicable provisions from the California Environmental Quality Act (CEQA). It should be noted that the City of National City follows the SANTEC *Traffic Impact Study Guidelines.*"

O-3-90

The comment states: "The DEIR recognizes that the National City General Plan is currently in the process of being updated; however, it appears that the revised General Plan was adopted on June 7, 2011, and a revised zoning map is expected to be adopted on August 16, 2011, well before the Regional Board will take action on the Project. The Regional Board should explain whether the results of the DEIR's traffic analysis will be affected in any way by the revisions to these plans."

Current information from the National City General Plan Update was used in development of the Draft PEIR to the extent practicable. For example, the Circulation Element Roadway Classifications Capacity and Level of Service Standards from draft National City General Plan were included in the Draft PEIR in Appendix B. Significant changes to the Draft PEIR are not expected as a result of the adoption of the revised General Plan because the content was incorporated in the Draft PEIR to the extent possible.

O-3-91

The comment states "At page 4.2-12, the DEIR correctly acknowledges that cleanup to 'background sediment quality level' is economically infeasible. The DEIR should be revised to indicate that cleanup to background also is technologically infeasible, as conceded in the Cleanup Team's written discovery responses."

This comment summarizes comments provided in the Anchor QEA letter. Please refer to responses O-3-157 through O-3-160 for a detailed response.

O-3-92

The comment states "Mitigation Measure 4.2.1 requires automatic rather than manual turbidity monitoring during dredging. The requirement for automatic dredging should be deleted and replaced by manual monitoring. Given possible disturbances in San Diego Bay, such as ship movements or storm events, the likelihood of false positives from automatic monitoring is high, and the associated dredging interruptions will significantly impair the ability to implement the proposed remedy in a timely and cost-effective manner."

This comment summarizes comments provided in the Anchor QEA letter. Please refer to response O-3-160 for a detailed response.

O-3-93

The comment states: "Mitigation Measure 4.2.2, as described on pages 1-10 and 4.2-17 of the DEIR, indicates that the contractor 'may' use air curtains in conjunction with silt curtains. In the Mitigation Monitoring and Reporting Program ('MMRP'), however, Mitigation Measure 4.2.2 provides that the contractor 'shall' use air curtains. DEIR, at 7-5. We understand that the use of air curtains is not intended to be mandatory, and that the 'shall' included in the MMRP is inadvertent. Accordingly, we request revision of the MMRP so that the requirements of Mitigation Measure 4.2.2 relative to the use of air curtains are consistent throughout the document."

This comment summarizes comments provided in the Anchor QEA letter. Please refer to response O-3-166 for a detailed response. The typo has been corrected. Please see Appendix A to this RTC document, Errata.

O-3-94

This comment states: "Mitigation Measure 4.2.2 includes a requirement for a double silt curtain enclosure, which adds considerable cost without any demonstrated environmental benefit. This requirement therefore should be eliminated."

This comment summarizes comments provided in the Anchor QEA letter. Please refer to responses O-3-163 and O-3-164 for a detailed response.

O-3-95

This comment states: "Mitigation Measure 4.2.2 also would require certain customized features on the dredge buckets, such as closure switches and Clam Vision TM. These features would add considerable cost, and pose the risk of complicating the contractor's work by providing ambiguous or misleading data during dredging. These features should not be required."

This comment summarizes comments provided in the Anchor QEA letter. Please refer to response O-3-165 for a detailed response.

O-3-96

This comment states: "Mitigation Measure 4.2.3 requires that double silt curtains are to 'fully encircle the dredging equipment and the scow barge being loaded with sediment.' Including the scow barge in the enclosure would significantly impact (and slow down) operations, increasing costs without measurable environmental benefit. This requirement should be removed."

This comment summarizes comments provided in the Anchor QEA letter. Please refer to response O-3-167 for a detailed response.

O-3-97

The comment states: "In addition to concerns raised elsewhere in this letter, Mitigation Measure 4.2.14 constitutes improper 'deferred' mitigation because it defers an assessment of reasonably anticipated cumulative impacts from other dredging projects in concert with the proposed Project."

The purpose of describing mitigation measures in an EIR is to identify mitigation measures that could minimize significant adverse impacts. Deferred mitigation measures are those that do not describe the actions that would be taken to reduce or avoid an impact. This may occur by deferring to future studies before devising the measure without including a description of the nature of the actions expected to be incorporated and performance standards for their effectiveness. Mitigation Measure 4.2.14 is a feasible measure that can be implemented by the San Diego Water Board as future dredging projects are proposed through its approval authority as a permitting agency involved in all dredging projects in the San Diego Bay.

O-3-98

The comment states: "Mitigation Measure 4.4.1 prohibits certain treatment and haul activities between the hours of 7:00 p.m. and 7:00 a.m., to the extent the activities would cause 'disturbing, excessive, or offensive noise,' unless a permit has been obtained from the City of San Diego's Noise Abatement and Control Administrator in conformance with San Diego Municipal Code section 59.5.0404. DEIR, at 4.4-10. NASSCO understands that this measure is intended to allow work to be performed continuously at all hours of the day, so long as a variance or other appropriate permit has been obtained from the City of San Diego, or so long as any noise generated is not 'disturbing, excessive, or offensive.' Please confirm that this is the Regional Board's understanding as well. The ability to work continuously throughout the day is critical to accomplishing the proposed remediation in a timely and cost-effective manner."

The TCAO, Section G. provisions requires that the Dischargers "…properly manage, store, treat, and dispose of contaminated soils and ground water in accordance with applicable federal, state, and local laws and regulations." The San Diego Water Board Cleanup Team understands that activities may occur continuously throughout the day in San Diego so long as it does not "…create disturbing, excessive or offensive noise unless a permit has been applied for and granted beforehand…" per San Diego Municipal Code 50.5.0404 Construction Noise.

See also response to comment O-3-170.

O-3-99

The comment states: "Mitigation Measure 4.4.2 is generally similar to Mitigation Measure 4.4.1, except that it applies to activities in National City rather than the City of San Diego. Mitigation Measure 4.4.2 should be modified to correspond to Measure 4.4.1, and allow activities to occur continuously throughout the day, in National City, so long as any noise generated is not 'disturbing, excessive, or offensive,' or if a variance or other appropriate permit has been obtained from National City."

Mitigation Measure 4.4.2 applies to activities in National City and is correctly worded. It will not be revised since National City's noise control ordinance differs from that of San

Diego. Section 4.4.2.2 of the Draft PEIR correctly identifies National City's noise control ordinance.

O-3-100

The comment states: "Mitigation Measure 4.6.15 provides that the contractor 'shall apply a mixture of Simple Green and water (a ratio of 10:1) to the dredged material.' DEIR, at 4.6-21. We understand that this measure is not intended to apply to every load of dredged material, and instead should apply only to the extent that an odor issue arises. As such, we request that the language of Mitigation Measure 4.6.15 be revised to clarify that liquids need only be applied to the extent odor issues arise with respect to particular portions of the dredged material."

The San Diego Water Board Cleanup Team agrees with the comment and the Draft PEIR has been clarified as suggested. See Appendix A, Errata.

O-3-101

The comment states: "The DEIR states that the 'no project' alternative would not reduce or minimize adverse effects to aquatic life, aquatic-dependent wildlife and human health beneficial uses 'because the contaminated sediments would remain in place.' DEIR, at 5-10. This statement is conclusionary, and is not supported by the requisite 'facts and analysis.' *Citizens of Goleta Valley v. Board of Supervisors*, 52 Cal. 3d 553, 568 (1990) ('the EIR must contain facts and analysis, not just the agency's bare conclusions or opinions.'). As set forth above and in NASSCO's May 26 Comments, substantial evidence does not support the contention that current sediment conditions adversely effect any of these beneficial uses, rather, such contentions are premised on assumptions which are clearly erroneous and not reflective of existing conditions at the Site. See CEQA Guidelines § 15384 ('Argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly erroneous or inaccurate … does not constitute substantial evidence.')."

The comment fails to acknowledge the full discussion of the No Project Alternative under Section 5.5.1. The Draft PEIR clearly cites the TCAO and DTR in Section 5.5 and provides a summary of the attainment of project objectives; it incorporates both by reference in Section 2. It is unnecessary and excessive to reproduce the facts and analysis as contained in the TCAO and DTR, and the citation, when combined with the project description and background in the Draft PEIR, does not result in a conclusion that is "argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly erroneous or inaccurate." The presented information clearly consists of substantial evidence in accordance with CEQA guidelines, which state:

Section 15384. Substantial Evidence

> *(a) "Substantial evidence" as used in these guidelines means enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached. Whether a fair argument can be made that the project may have a significant effect on the environment is to be determined by examining the whole record before the lead agency. Argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly erroneous or inaccurate, or evidence of social or economic impacts which do not contribute to or are not caused by physical impacts on the environment does not constitute substantial evidence.*
>
> *(b) Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts.*

CEQA guidelines clearly state that substantial evidence "means enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached."

Thus, the comment is incorrect, as the argument is clearly related to the conclusion reached in the Draft PEIR as differing from the conclusion reached by NASSCO, rather than pertaining to the evidence relied upon to reach the conclusion. It is evident that NASSCO has reached a different conclusion based upon the whole record before the lead agency, as evidenced by the reference to comments submitted on the TCAO and DTR, as well comments received on the Draft PEIR. Clearly, the San Diego Water Board Cleanup Team and NASSCO relied upon the same "substantial evidence" to reach differing conclusions. The Draft PEIR, including the documents incorporated by reference therein, contains facts and analysis, expert opinion supported by facts, and reasonable assumptions predicated upon facts. The Draft PEIR is adequate and does not need to be revised.

O-3-102

The comment states: "The DEIR's conclusion that the no project alternative would result in the Site continuing to be "injurious to human health," and "a public nuisance" is similarly unsupported by "facts and analysis" or any substantial evidence. DEIR, at 5-10."

Please refer to response O-3-101. The Draft PEIR is adequate and does not need to be revised.

O-3-103

The comment states: "Alternative 2 consists of dredging and constructing a CAD facility 'at a yet to be determined location.' DEIR, at 5-11. Given that a location for the facility has not been identified, the feasibility of this alternative cannot properly be evaluated."

The Draft PEIR provides a reasonable range of project alternatives and potential staging areas and does not select a preferred alternative or staging area. Once a project has been selected, detailed analyses will be provided in a site-specific environmental document, including any staging area(s) to be used and any potential use of Confined Aquatic Disposal.

O-3-104

The comment states: "Alternative 2 assumes that a majority of dredged sediments would be 'barged to an ocean disposal location.' DEIR, at 5-11. But elsewhere the DEIR rejects consideration of ocean disposal. If the Regional Board believes ocean disposal is a feasible option, the DEIR should explain the basis for that decision. If not, the DEIR should state clearly that Alternative 2 is not feasible and may not be adopted."

To clarify, Alternative 2 assumes that a majority of the dredged sediments would be "barged to an ocean disposal location" for confined disposal. As described in the Draft PEIR, Alternative 2 is different from simple ocean disposal (via dumping) at a USEPA approved offshore location (see Section 5.4.1 "Alternatives Considered But Not Studied Further," which precedes the referenced section at 5-11).

O-3-105

The comment states: "The DEIR indicates that 'Alternative 2 could have greater impacts [to marine biological resources] if the CAD facility did not effectively sequester underlying contaminants …' DEIR, at 5-15; see also id. at 5-13. But the DEIR provides no analysis of whether this may or may not happen, and concludes only that the potential marine biological impacts from Alternative 2 'would be slightly increased as compared to the proposed project' but remain less than significant with mitigation. Id. Without any analysis of whether or not the CAD cap will maintain its integrity, Alternative 2 should be considered to have a significant effect on marine biological resources and water quality, and should be treated as environmentally inferior to the proposed Project. This is certainly a critical area that would warrant detailed evaluation before Alternative 2 could be approved by the Regional Board."

CEQA Guidelines (section 15126.6) provide information on the level of discussion necessary when considering alternatives:

> (*d) Evaluation of alternatives. The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.* (*County of Inyo v. City of Los Angeles* (1981) 124 Cal. App. 3d 1).

The comment requests a detailed discussion and evaluation within the Draft PEIR on whether specific mitigation measures that would be a conditional element for the alternative may or may not maintain integrity, presumably in perpetuity (in this case, integrity of an engineered cap, which notably would also be subject to further environmental review and CEQA tiering). This level of detailed discussion for alternatives is not necessary, as the alternative should "be described in sufficient detail to serve the informational purpose of the report to the government body which will act…" (*City of Rancho Palos Verdes v. City Council* (2d Dist. 1976) 59 Cal. App. 3d 869,892 [129 Cal. Rptr. 173]). Furthermore, the "discussion of alternatives need not be exhaustive, and the requirement as to the discussion of alternatives is subject to a construction of reasonableness. 'Crystal ball' inquiry is not required." (*Residents Ad Hoc Stadium Committee v. Board of Trustees* (3d Dist. 1979) 89 Cal. App. 3d 274, 286 [152 Cal. Rptr. 585].

For this alternative, and subsequent comments on the other alternatives, the level of prescribed detail is sufficient to determine if reasonable alternatives would eliminate and/or reduce significant unavoidable impacts when compared to the proposed project. No reported CEQA case has suggested or required a level of detail similar to that of the proposed project, including when an alternative may result in significant effects beyond or in addition to those of the proposed project: "If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed." (CEQA Guidelines section 15126.6 (d), citing *County of Inyo v. City of Los Angeles* (3d Dist. 1981) 124 Cal. App. 3d 1 [177 Cal. Rptr. 479]).

In regard to the level of information required for consideration in the Draft PEIR, the alternatives presented in the Draft PEIR are sufficient for the EIR tiering process, and is consistent with applicable code and CEQA Guidelines (Public Resources Code sections 21068.5 and 21093(b), CEQA Guidelines section 15152). Please refer also to response O-4-6. Once a project has been selected, detailed analyses will be provided in a site-specific environmental document, including any staging area(s) to be used and any potential use of a Confined Aquatic Disposal facility.

O-3-106

The comment states: "The Regional Board lacks authority to adopt Alternative 2 because the Regional Board's authority under the Porter Cologne Act is limited to setting cleanup levels, rather than selecting methods to achieve cleanup levels. Water Code § 13360. Accordingly, Alternative 2 is legally infeasible under CEQA. *Kenneth Mebane Ranches,* 10 Cal. App. 4th at 291; *Sequoyah Hills Homeowners Ass'n,* 23 Cal. App. 4th at 715-16; CEQA § 21004; CEQA Guidelines § 15040."

Please refer to response O-3-84. Preparation of a Programmatic EIR to evaluate potential cleanup options does not violate section 13360 of the Water Code or any other applicable regulations.

O-3-107

The comment states: "The DEIR indicates that '[a] complete analysis of the potential impacts related to Alternative 3, the Convair Lagoon CDF, was completed by Atkins and is included in Section 5.10 of this chapter. Technical appendices in support of the Convair Lagoon CDF Alternative Analysis are included as Appendices I through O of this PEIR.' DEIR, at 5-18. But the DEIR fails to explain why a 'complete analysis' of this alternative was prepared by separate consultants, or why technical appendices were included for this alternative. The DEIR also fails to explain why a 'complete analysis' and technical appendices were not provided for Alternatives 1, 3 or 4."

The inclusion of detailed information about the Convair Lagoon CDF Alternative in the Draft PEIR is intended to illuminate the potential effects of such an alternative and to inform the decision-makers. The analysis was prepared by the Unified Port of San Diego, a responsible agency under CEQA, with oversight by the San Diego Water Board Cleanup Team. The Convair Lagoon is not the proposed project, nor has it been identified as the preferred course of action. The Convair Lagoon Alternative was not identified as an Environmentally Superior Alternative to the proposed project and would require mitigation measures in addition to those required for the proposed project in multiple areas, most significantly including water quality and biological resources.

O-3-108

The comment states: "The DEIR must explain the basis for this discrepancy. If Regional Board staff believe the cursory analysis in Section 5.7 is insufficient for a proper assessment of Alternative 3, then it must explain why it believes the same cursory analysis is sufficient for consideration of the remaining alternatives. If Regional Board staff believes that the analysis included for Alternatives 1, 3 and 4 is insufficient to allow the Regional Board to adopt one of those alternatives, or fairly compare these alternatives to the proposed Project, the DEIR should also make that point clear."

Please see responses to comments O-3-105 and O-3-107.

The analysis of alternatives in the Draft PEIR is sufficient to determine if reasonable alternatives would eliminate and/or reduce significant unavoidable impacts when compared to the proposed project. "If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed." (CEQA Guidelines section 15126.6 (d), citing *County of Inyo v. City of Los Angeles* (3d Dist. 1981) 124 Cal. App. 3d 1 [177 Cal. Rptr. 479]).

The San Diego Water Board Cleanup Team concludes that the alternatives presented in the DPEIR are sufficient for the EIR tiering process, and that the alternatives analysis is consistent with applicable code and CEQA Guidelines (Public Resources Code sections

21068.5 and 21093(b), CEQA Guidelines section 15152). Once a project has been selected, detailed analyses will be provided in a site-specific environmental document.

O-3-109

The comment states: "The Regional Board lacks authority to adopt Alternative 3 because the Regional Board's authority under the Porter Cologne Act is limited to setting cleanup levels, rather than selecting methods to achieve cleanup levels. Water Code § 13360. Accordingly, Alternative 3 is legally infeasible under CEQA. *Kenneth Mebane Ranches*, 10 Cal. App. 4th at 291; *Sequoyah Hills Homeowners Ass'n*, 23 Cal. App. 4th at 715-16; CEQA § 21004; CEQA Guidelines § 15040."

Please refer to response O-3-84. Preparation of a Programmatic EIR to evaluate potential cleanup options does not violate section 13360 of the Water Code or any other applicable regulations.

O-3-110

The comment states: "The DEIR indicates that 'the location of the CDF for Alternative 4 is unknown at this time; therefore, it is unknown whether this alternative would result in any short-term or long-term loss of use of shipyard or other San Diego Bay-dependent facilities.' DEIR, at 5-20. But this is only one reason why the feasibility of Alternative 4 cannot be assessed without identification of where the CDF would be located. The DEIR fails to demonstrate that Alternative 4 is a feasible alternative that could attain most of the Project Objectives, and it may not be adopted by the Regional Board."

The Draft PEIR provides a reasonable range of project alternatives and potential staging areas and does not select a preferred alternative or staging area. Once a project has been selected, detailed analyses will be provided in a site-specific environmental document, including any staging area(s) to be used and the location of any CDF.

O-3-111

The comment states: "The DEIR indicates that Alternative 4 'could have greater impacts if the covering did not effectively sequester underlying contaminants …' DEIR, at 5-23, see also id. at 5-21. But the DEIR provides no analysis of whether this may or may not happen, and concludes only that the potential marine biological impacts from Alternative 4 'would be slightly increased as compared to the proposed project' but remain less than significant with mitigation. Id. Without any analysis of whether or not the CDF covering will maintain its integrity, Alternative 4 should be considered to have a significant effect on marine biological resources and hydrology and water quality, and should be treated as environmentally inferior to the proposed Project. This is certainly a critical area that would warrant detailed evaluation before Alternative 4 could be approved by the Regional Board."

Refer to response O-3-105. Future decisions and implementing actions following certification of the PEIR and approval of the project will be subject to subsequent environmental review pursuant to CEQA. The PEIR, once certified, may be used as an environmental clearance baseline against which to evaluate future site-specific implementation approvals and permits for implementation of the proposed project. Thus, the “tiering” process and need for further environmental review will be specific to the selection of the dewatering and treatment site(s) for the dredged materials.

O-3-112

The comment states: “The Regional Board lacks authority to adopt Alternative 4 because the Regional Board’s authority under the Porter Cologne Act is limited to setting cleanup levels, rather than selecting methods to achieve cleanup levels. Water Code § 13360. Accordingly, Alternative 4 is legally infeasible under CEQA. *Kenneth Mebane Ranches*, 10 Cal. App. 4th at 291; *Sequoyah Hills Homeowners Ass’n*, 23 Cal. App. 4th at 715-16; CEQA § 21004; CEQA Guidelines § 15040.”

Please refer to response O-3-84. Preparation of a Programmatic EIR to evaluate potential cleanup options does not violate section 13360 of the Water Code or any other applicable regulations.

O-3-113 and O-3-114

The comment states: “The DEIR’s conclusion that the no project alternative ‘would cause [the alleged] environmental impacts related to the existing conditions to be perpetuated,’ is not supported by any ‘facts and analysis.’ Citizens of Goleta Valley, 52 Cal. 3d at 568. This is a fatal omission, as it is the sole justification provided by the DEIR for foregoing the “environmentally superior” no project alternative, which would avoid all of the proposed Project’s significant and potentially significant impacts.”

Refer to response O-3-101.

O-3-115

The comment states: “The DEIR selected four alternatives for consideration: (1) the No Project/No Development Alternative (Alternative 1), (2) Confined Aquatic Disposal Site (Alternative 2), (3) Convair Lagoon Confined Disposal Facility (CDF) (Alternative 3), and (4) CDF with Beneficial Use of Sediments (Alternative 4). DEIR, at 5-9. While the alternatives analysis (and the DEIR as a whole) is deficient for its failure to study the MNA alternative, as detailed above, it also is facially biased in favor of Alternative 3; which, unlike the other Alternatives, received its own, detailed supplemental evaluation consisting of roughly 239 pages, or approximately 31% of the entire DEIR, not including six Alternative-specific appendices totaling approximately 247 additional pages. DEIR, at 5-32. By contrast, the other three alternatives each received between 2 and 6.5 pages of analysis in the DEIR, with no appendices.”

The inclusion of detailed information about the Convair Lagoon CDF Alternative in the Draft PEIR is intended to illuminate the potential effects of such an alternative and to inform the decision-makers. The Convair Lagoon is not the proposed project, nor has it been identified as the preferred course of action. The Convair Lagoon Alternative was not identified as an Environmentally Superior Alternative to the proposed project and would require mitigation measures in addition to those required for the proposed project in multiple areas, most significantly including water quality and biological resources. Thus, the Draft PEIR is not biased toward this alternative.

O-3-116

The comment states: “We understand that Alternative 3 is favored by the San Diego Unified Port District (‘Port District’), which makes sense given that this alternative would create ten acres of shoreline property that would likely be leased by the Port District to third parties. DEIR, at 5-117. We also understand that the detailed supplemental analysis of Alternative 3 was submitted on behalf of the Port District, and at the Port District’s request, and note that the analysis was prepared by different consultants than those that prepared the remainder of the DEIR, including the analysis of the other alternatives. DEIR, at 9-1 and 9-2. The DEIR should clearly explain to the public the circumstances associated with the Regional Board’s decision to include more than 200 pages of analysis (plus appendices) for one alternative prepared by separate consultants for a party that will benefit from that alternative (if implemented), while the other alternatives each received less than seven pages of analysis.”

As explained in response to comment O-4-3, the Unified Port of San Diego (Port) is the public agency with land use authority in the Port District, including the potential Staging Areas for the proposed project and the Convair Lagoon. The Port is a responsible agency identified in Chapter 3.0 of the Draft PEIR. The shipyards are private entities, not public agencies, and therefore do not enjoy the same status as the Port under CEQA.

O-3-117

The comment states: “The Regional Board should make publicly available any contract or other agreement that has been entered into between the Regional Board and the Port District (or the Port District’s consultants) regarding the preparation of the expanded analysis for Alternative 3, as well as any other documentation associated with the decision to include the expanded analysis of Alternative 3 in the DEIR. The Regional Board should also make clear if Alternative 3 is the politically preferred alternative, or is otherwise receiving special treatment because it is being advanced by the Port District, and explain why the Port District is being allowed to submit its own self-serving alternatives analysis for inclusion in the DEIR, an offer that has not (to NASSCO’s knowledge) been extended to other Designated Parties or members of the public. CEQA’s emphasis on public participation and open decision making demands that the public be fully apprised of the circumstances associated with the inclusion of the expanded analysis regarding Alternative 3.”

As explained in response to comment O-4-3, the Unified Port of San Diego (Port) is the public agency with land use authority in the Port District, including the potential Staging Areas for the proposed project and the Convair Lagoon. The Port is a responsible agency identified in Chapter 3.0 of the Draft PEIR. The shipyards are private entities, not public agencies, and therefore do not enjoy the same status as the Port under CEQA.

O-3-118

The comment states: "To this end, NASSCO requests the opportunity to prepare a detailed analysis of the MNA alternative for incorporation into a recirculated DEIR. To the extent the Regional Board is unwilling to allow NASSCO to prepare an analysis of the MNA alternative for inclusion into the DEIR, it should explain the basis for treating NASSCO differently than the Port District."

As explained in response to comment O-4-3, the Unified Port of San Diego (Port) is the public agency with land use authority in the Port District, including the potential Staging Areas for the proposed project and the Convair Lagoon. The Port is a responsible agency identified in Chapter 3.0 of the Draft PEIR. The shipyards are private entities, not public agencies, and therefore do not enjoy the same status as the Port under CEQA. It should be noted that the Project Description includes natural recovery as a remedial action that may be included in the project.

O-3-119

The comment states: "Biasing an EIR in favor of one entity or alternative is grounds for invalidation under CEQA. For example, CEQA's implementing regulations specifically provide that '[t]he lead agency is responsible for the adequacy and objectivity of the draft EIR,' and the draft EIR 'must reflect the independent judgment of the lead agency.' CEQA Guidelines § 15084(e); see also CEQA § 21082.1 (EIR 'shall be prepared directly by, or under contract to' the lead agency). Although a lead agency may enlist the initial drafting and analytical skills of an applicant's consultant, the agency must apply its 'independent review and judgment to the work product before adopting and utilizing it.' *Eureka Citizens*, 147 Cal. App. 4th at 369-371 (quotations omitted); *People v. County of Kern*, 62 Cal. App. 3d 761, 775 (1976) (lead agency 'may not use a draft EIR as its own without independent evaluation and analysis.'); CEQA Guidelines § 15084(e) ('Before using a draft prepared by another person, the lead agency shall subject the draft to the agency's own review and analysis.'). Thus, the Regional Board may not simply adopt the Port District's submittal verbatim, and the DEIR must include a reasoned basis for its extensive analysis of Alternative 3 relative to the other alternatives."

Refer to responses O-3-115 through O-3-118. The Convair Lagoon Alternative was not identified as an Environmentally Superior Alternative to the proposed project and would require mitigation measures in addition to those required for the proposed project in multiple areas, most significantly including water quality and biological resources. Thus, the Draft PEIR is not biased toward this alternative.

O-3-120

The comment states: "Moreover, as noted above, the Port District was the only entity that was permitted to directly draft sections of the EIR, improperly biasing the alternatives analysis in its favor. This is particularly troubling given the circumstances of the instant proceeding. Unlike a typical development project subject to CEQA, where approvals are sought by a single project applicant, here, multiple parties are required to implement the Project and currently are involved in federal court litigation regarding the proper allocation of costs required for Project implementation. There is no basis for allowing the Port District to prepare a self-serving analysis of an alternative that would provide it with financial and other benefits associated with the creation of an additional ten acres of shoreline property while imposing additional costs on other Designated Parties and additional (but largely undisclosed) impacts on the environment."

As explained in response to comment O-4-3, the Unified Port of San Diego (Port) is the public agency with land use authority in the Port District, including the potential Staging Areas for the proposed project and the Convair Lagoon. The Port is a responsible agency identified in Chapter 3.0 of the Draft PEIR. The shipyards are private entities, not public agencies, and therefore do not enjoy the same status as the Port under CEQA. The Convair Lagoon Alternative was not identified as an Environmentally Superior Alternative to the proposed project and would require mitigation measures in addition to those required for the proposed project in multiple areas, most significantly including water quality and biological resources. Thus, the Draft PEIR is not biased toward this alternative.

O-3-121

The comment states: "Alternative 3, which the DEIR acknowledges has greater impacts than the proposed Project, (DEIR, at 5-19), should not be adopted for a variety of reasons, but primarily because it would take contaminated sediment from one location in the Bay and transport it for burial in another location of the Bay, creating the very real possibility that contaminants from the sediment will escape from the CDF and recontaminate another portion of the Bay. As a threshold matter, the DEIR simply fails to analyze this risk in sufficient detail to provide the decision makers with an accurate assessment of the likelihood that the Convair site may be recontaminated due to CDF failure. This alone mandates that the DEIR treat Alternative 3 as causing a significant impact to water quality, hazards and hazardous materials, and marine biological resources, and dictates that the Regional Board may not adopt Alternative 3 because it is environmentally inferior to the proposed Project. CEQA § 21002 (project may not be approved if feasible alternatives exist that would substantially lessen environmental impacts)."

Alternative 3 would also result in significant unavoidable air quality impacts. Table 5-1 in the Draft PEIR clearly lays out a comparison of alternatives with the proposed project, and further allows a comparison of alternatives. Furthermore, as stated in Section 5.9 of the Draft PEIR, "there is no clear Environmentally Superior Alternative to the proposed project. No one alternative would eliminate the significant and adverse impacts of the proposed project." The inclusion of detailed information about the Convair Lagoon CDF Alternative in the Draft PEIR is intended to illuminate the potential effects of such an alternative and to inform the decision-makers. The Convair Lagoon is not the proposed project, nor has it been identified as the preferred course of action. The Convair Lagoon Alternative was not identified as an Environmentally Superior Alternative to the proposed project and would require mitigation measures in addition to those required for the proposed project in multiple areas, most significantly including water quality and biological resources. Refer to response O-3-105 for additional discussion of the level of analysis for alternatives.

O-3-122

The comment states: "A variety of additional inadequacies regarding Alternative 3 and the DEIR's analysis of same are set forth below (and also are discussed in the concurrently submitted Exponent Comments):

"As noted above, the DEIR indicates that Alternative 3 cannot be commenced until continuing discharges of PCBs to the Convair Lagoon site are abated to the satisfaction of the State Board, in order to 'prevent potential recontamination of the marine sediments in the bay.' DEIR, at 5-35, 5-208. But the DEIR does not provide any indication of how long it will take to achieve source control at Convair Lagoon, and thus fails to provide any information as to how soon Alternative 3 could be implemented in relationship to the Project or other alternatives. This clouds the viability of Alternative 3, given the Regional Board's desire to implement the TCAO as soon as reasonably possible. It also clouds the feasibility of the alternative under CEQA, which requires that an alternative be 'capable of being accomplished in a successful manner within a reasonable period of time …' CEQA Guidelines § 15364 (emphasis added)."

Refer to response O-4-6. Even assuming that a CDF could be permitted at Convair Lagoon, it is unlikely that it could be permitted in time to meet the contemplated TCAO implementation schedule.

O-3-123

The comment states: "The DEIR states the source of continuing PCB contamination to the Convair site 'presumably' is a 60-inch storm drain, reflecting uncertainty as to the source and highlighting the difficulty that may be required to ultimately address the issue. DEIR, at 5-224. It also suggests that cap failure may, in part, be the cause of the recontamination, a cautionary point in relationship to Alternative 3's contemplated CDF."

Refer to response O-4-6. Refer also to response O-3-105 for additional discussion of the level of analysis for alternatives.

O-3-124

The comment states: "Alternative 3 is premised on the assumption that 15%, or 21,510 cubic yards, of the material dredged from the Shipyard Sediment Site will be classified as 'hazardous' and thus would not qualify for placement in the CDF, due to high contamination levels. Conversely, the DEIR assumes that 85%, or 121,890 cubic yards, would be placed within the CDF. DEIR, at 5-42. But the DEIR fails to provide any support for these assumptions, which are critical to the feasibility of Alternative 3. If these assumptions are incorrect, and substantially more of the dredged sediment does not qualify for placement into a CDF, the ability to feasibly implement Alternative 3 will be jeopardized."

Refer to response to comment O-3-56.

O-3-125

The comment states: "The DEIR indicates that the thresholds of significance used to assess Alternative 3 are 'primarily' based on Appendix G to the CEQA Guidelines. DEIR, at 5-62. The DEIR should explain which thresholds of significance are not based on Appendix G, and the reason for departing from these thresholds in certain circumstances."

CEQA Guidelines section 15064.7 "Thresholds of Significance" discusses the development and adoption of thresholds of significance. This section states, "(a) Each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects. A threshold of significance is an identifiable quantitative, qualitative, or performance level of a particular environmental effect..." Appendix G of the CEQA Guidelines provides a useful outline for evaluating significance. However, CEQA states that an agency may adopt alternate thresholds. The CEQA Guidelines require that the thresholds used in an EIR be stated; however, it is not necessary to provide justification for thresholds that differ from the language in Appendix G. Section 5 provides ample discussion of the significance thresholds used to evaluate the project alternatives and no further information is required.

O-3-126

The comment states: "Table 5-8 purports to provide a list of past, present and probable future projects within the vicinity of the Convair Lagoon Alternative site. DEIR, at 5-63-67. But the table fails to include a list of past, present and probable future (or indeed any other) dredging projects in San Diego Bay, which necessarily precludes an accurate evaluation of the cumulative impacts from Alternative 3's proposed dredging of 143,000 cubic yards of sediment from the Bay."

Refer to responses O-3-76 through O-3-82.

O-3-127

The comment states: "The DEIR acknowledges that '[e]xtensive eelgrass beds are present on the Convair Lagoon Alternative site.' DEIR, at 5-101. The DEIR indicates that Alternative 3 would destroy 5.64 acres of eelgrass, with 6.01 acres significantly impacted. DEIR, at 5-113, 114. Given the DEIR's acknowledgment of the importance of eelgrasss as habitat for a variety of marine life, and the extensive (and uncertain) mitigation that would be required to address Alternative 3's substantial eelgrass destruction, this weighs strongly against adoption of Alternative 3, in which eelgrass impacts from disposal of sediment would substantially outweigh eelgrass impacts caused by dredging at the Shipyard Site."

The San Diego Water Board Cleanup Team agrees with the comments regarding the loss of eelgrass, intertidal and open water habitat. While the Draft PEIR presumes the loss of eelgrass, intertidal and open water habitat can be mitigated, the scale, geographic location, and status of the eelgrass beds as an existing mitigation site clearly classifies Alternative 3 as not Environmentally Superior to the proposed project.

O-3-128

The comment states: "Alternative 3 indicates that the Southern California Eelgrass Mitigation Policy requires pre and post construction surveys within 30 days of project commencement and completion. DEIR, at 5-109. But elsewhere the DEIR indicates that such surveys are required 120 days before proposed start dates. DEIR, at 4.5-56. This discrepancy should be clarified."

Please note the typo regarding eelgrass surveys has been corrected. See Appendix A of this RTC document, Errata. The SCEMP requires post-construction surveys within 30 days of project completion. Pre-construction surveys are required to be conducted between March through October and are generally valid for 60 days, except that surveys conducted August through October are valid until the following March.

O-3-129

The comment states: "Alternative 3 would result in the direct loss of 4 acres of intertidal habitat; another significant impact weighing heavily against adoption of Alternative 3. DEIR, at 5-114."

Refer to response O-3-127.

O-3-130

The comment states: "The DEIR contends that Alternative 3 satisfies a Port Master Plan ('PMP') goal that 'Bay fills, dredging and the granting of long-term leases will be taken only when substantial public benefit is derived.' DEIR, at 5-117. According to the DEIR, a substantial public benefit would be satisfied because the Alternative 'would protect the quality of the waters of San Diego Bay for use and enjoyment by the people of the state' by implementing the TCAO. This is inaccurate, because, rather than 'protecting' the waters of the state, Alternative 3 would actually eliminate 10 acres of water by converting it to upland habitat. Accordingly, Alternative 3 would cause a significant impact regarding consistency with local policies and ordinances, by virtue of its conflict with the PMP's Goals. This is particularly critical given that Alternative 3 is the only alternative that would require the elimination of state waters in order to implement the TCAO."

The goal cited is the protection of the "quality" of the waters of San Diego Bay, not the quantity. Substantial public benefit could be derived if the alternative successfully remediated contamination at the Shipyard Sediment Site. The commenter's assertion that eliminating 10 acres of water by converting it to upland uses would conflict with the stated goal of protecting the quality of the waters reflects a differing interpretation than was reached by the San Diego Water Board Cleanup Team in its analysis. This does not negate the validity of the conclusion of the Draft PEIR; furthermore, as this information was provided through consultation with the Port (the agency ultimately responsible for interpreting the PMP), the conclusion in the Draft PEIR is supported by expert opinion. The table beginning on page 5-117 of the Draft PEIR provides substantiation of the conclusion of the project's consistency with applicable goals in the PMP.

O-3-131

The comment states: "The DEIR also contends that Alternative 3 satisfies PMP Goal X, requiring that the 'quality of water in San Diego Bay will be maintained at such a level as will permit human water contact activities.' DEIR, at 5-118. Rather than 'maintaining' water quality, however, Alternative 3 calls for the elimination of 10 acres of water by converting it to upland habitat. While the DEIR claims that Alternative 3 satisfies this goal by virtue of implementing the TCAO, Alternative 3 is the only alternative that proposes eliminating water in the Bay in order to accomplish TCAO objectives. Alternative 3 therefore would cause a significant impact by conflicting with local policies and ordinances."

Refer to response O-3-130.

O-3-132

The comment states: "The DEIR asserts that Alternative 3 satisfies PMP Goal XI, which provides that '[t]he District will protect, preserve and enhance natural resources, including natural plant and animal life in the Bay as a desirable amenity, and ecological necessity, and a valuable and usable resource.' DEIR, at 5-118. But since Alternative 3 will destroy up to six acres of eelgrass at the Convair site, and destroy the benthic community, on its face the alternative is incapable of 'preserving' same. While mitigation measures propose 'creating similar habitat in an alternative location,' (DEIR, at 5-118), this certainly is not equivalent to 'preserving' the eelgrass present at the Convair site in the first instance. Alternative 3 therefore would cause a significant impact by conflicting with local policies and ordinances. Alternative 3 conflicts with Goal XI for the additional reason that it proposes off-site creation of eelgrass habitat in locations outside of the PMP area, insufficient to comply with the PMP's mandate."

Refer to response O-3-130. As stated on page 5-118 in the Draft PEIR, "Approximately three-quarters of the water area associated with the Convair Lagoon Alternative site is currently used for remediation and monitoring activities and is not considered a desirable ecological amenity or resource because the habitats on site are too fragmented to support any listed species or species considered to be rare and the site is not considered an environmentally sensitive habitat area under the California Coastal Act." Creating or restoring eelgrass habitat in a location that is not fragmented and adversely affected by adjacent land uses to support special status species, particularly if habitat is created at a greater than 1:1 ratio as proposed in Mitigation Measure 5.10.4.3, would provide greater biological and ecological value than preserving the eelgrass present on the site. Potential locations for restoration listed in Table 5-25 of the Draft PEIR include an area adjacent to the Convair Lagoon.

O-3-133

The comment states: "Alternative 3's proposed Mitigation Measure 5.10.4.3 constitutes improper 'deferred' mitigation because it defers a determination of the 'success criteria' and 'actions to undertake for failed mitigation goals' until after Project approval. It also does not provide for a final Regional Board determination as to the adequacy of the mitigation measure."

Mitigation Measure 5.10.4.3 has been revised to include success criteria and San Diego Water Board, as well as resource agency, approval. See Appendix A of this RTC document, Errata.

O-3-134

The comment states: "Alternative 3's proposed Mitigation Measure 5.10.4.4 also constitutes improper deferred mitigation because it does not provide success criteria or performance standards, and does not provide for a final Regional Board determination as to the adequacy of the mitigation measure."

Mitigation Measure 5.10.4.4 has been revised to include San Diego Water Board approval. Performance standards, including mitigation ratios, are included in this measure. See Appendix A of this RTC document, Errata.

O-3-135

The comment states: "Not only will Alternative 3 cause greater environmental impacts than the proposed Project, but its significant impacts to 6 acres of eelgrass and 4 acres of intertidal habitat at the Convair site (among other impacts) would require the imposition of substantial mitigation measures. While these measures are uncertain regarding their potential for success, they also will cause significant environmental impacts of their own requiring even further mitigation. DEIR, at 5-125. This weighs heavily against adoption of Alternative 3, and there is simply no reason to rely on mitigation measures to protect against the additional impacts from Alternative 3, only to be required to rely on even more mitigation measures to address the environmental impacts caused by the initial mitigation, when other less environmentally harmful alternatives are available."

Refer to responses O-3-115 through O-3-134.

O-3-136

The comment states: "Recirculation of an EIR is required if 'significant new information' is added to the EIR after notice of public review has been given but before final certification. CEQA Guidelines § 15088.5(a). Recirculation is generally required when the addition of new information deprives the public of a meaningful opportunity to comment on substantial adverse project impacts or feasible mitigation measures or alternatives that are not adopted. *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.*, 6 Cal. 4th 1112 (1993); CEQA Guidelines §15088.5(a). The CEQA Guidelines specify that the new information requiring recirculation may include changes in the project or the environmental setting. CEQA Guidelines §15088.5(a). Recirculation is also required if information added to the EIR shows a new potentially significant impact that was not previously addressed. *Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova*, 40 Cal. 4th 412, 447 (2007). 'A decision not to recirculate must be supported by substantial evidence in the administrative record.' CEQA Guidelines § 15088.5(e).

"Here, recirculation of a revised DEIR is required for at least the following reasons, among others:"

The comment is introductory to the subsequent comments in the letter. Please refer to responses O-3-137 through O-3-141.

O-3-137

The comment states: "A revised DEIR must evaluate the MNA alternative. As explained above, the MNA alternative will avoid all of the Project's significant and potentially significant impacts and obviate the need for mitigation measures, and substantial evidence shows that it can feasibly attain Project Objectives in a reasonable period of time."

Refer to responses O-3-2 and O-3-8 through O-3-27 for a discussion of this topic. Recirculation of the Draft PEIR is not required.

O-3-138

The comment states: "A revised DEIR must include an updated description of the environmental setting, including a disclosure of past and ongoing sources of contamination to the Site via stormwater from Chollas Creeks and SW4 and SW9, as well as an accurate description of baseline conditions regarding sediment quality at the Site, in relationship to the potential impairment of aquatic life, aquatic-dependent wildlife and human health beneficial uses. This baseline must be premised on actual conditions rather than hypothetical (and erroneous) assumptions."

Refer to responses O-3-3 and O-3-4.

O-3-139

The comment states: "A revised DEIR must evaluate the reasonably foreseeable potentially significant impact of recontamination of the Site, after Project implementation, from ongoing and uncontrolled stormwater discharges from Chollas Creek and SW4 and SW9. Mitigation measures and alternatives to address this potentially significant impact must also be evaluated."

The comment is incorrect. The proposed project is a remedial dredging cleanup project that will not result in long-term changes to existing storm water conditions. In accordance with the requirements of CEQA, an EIR must identify and focus on the significant environmental effects of the proposed project. Because the purpose of an EIR is to assess the project's effects on the existing environment, an EIR need not resolve existing environmental problems that will not be made worse by the project.

O-3-140

The comment states: "A revised DEIR must include an updated cumulative impacts analysis accounting for scheduled and reasonably anticipated probable future dredging projects in San Diego Bay."

Refer to responses to comments O-3-76 through O-3-82. The cumulative impacts analysis is sufficient and recirculation of the Draft PEIR is not required.

O-3-141

The comment states "A revised DEIR must treat as 'significant' impacts previously found to be less than significant based on mitigation measures that are infeasible or otherwise impermissible, including mitigation that may not be adopted by the Regional Board under the Porter Cologne Act, and which therefore is legally infeasible under CEQA."

As addressed throughout this RTC document (O-3), the mitigation measures included in the Draft PEIR are feasible and enforceable, and do not violate the Water Code or other applicable regulations. Recirculation of the Draft PEIR is not required. No further response is possible in the absence of specific examples.

O-3-142

The comment states: "Finally, NASSCO reasserts its objection to the Regional Board's decision to require preparation of an EIR for the Project, on the grounds that the Project is 'categorically exempt' from CEQA review. While NASSCO's preceding comments are based on its assumption that the Regional Board and its staff will continue with the Project's CEQA review notwithstanding that the Project should be found exempt, the preceding comments should in no way be interpreted as a waiver of NASSCO's position that an EIR is not required."

The comment is introductory to following comments in the letter. This comment expresses an opinion about the San Diego Water Board's decision to prepare an EIR and is not a comment on the environmental analysis contained in the Draft PEIR. This comment will be included as part of the record and made available to the decision-makers prior to a final decision on the project. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary. See also response O-3-148.

O-3-143

The comment states: "CEQA section 21084(a) requires the Secretary of the Natural Resources Agency to prepare and adopt 'a list of classes of projects which have been determined not to have a significant effect on the environment,' and which are therefore 'categorically exempt' from CEQA. Thirty-three such categorical exemptions are currently authorized, (CEQA Guidelines sections 15301-333), and each exempted class of project 'embodies a 'finding by the Resources Agency that the project will not have a significant environmental impact.'' *San Lorenzo Valley Community Advocates For Responsible Education v. San Lorenzo Valley Unified School District*, 139 Cal. App. 4th 1356, 1381 (2006); CEQA Guidelines § 15300. If a project is categorically exempt, it 'may be implemented without any CEQA compliance whatsoever.' *Ass'n for Prot. of Envt'l Values in Ukiah v. City of Ukiah*, 2 Cal. App. 4th 720, 726 (1991)."

The comment provides information about CEQA. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary. See also response O-3-148.

O-3-144

The comment states: "As explained in the motion filed by NASSCO on July 23, 2010, the TCAO is 'categorically exempt' from CEQA under at least the three exemptions set forth in CEQA Guidelines sections 15307, 15308 and 15321, which apply to actions by regulatory agencies to protect natural resources or the environment, as well as regulatory enforcement actions. More specifically, the referenced classes of exempted projects include (i) 'actions taken by regulatory agencies as authorized by state law or local ordinance to assure the maintenance, restoration, or enhancement of a natural resource where the regulatory process involves procedures for protection of the environment' (Class 7); (ii) 'actions taken by regulatory agencies, as authorized by state or local ordinance, to assure the maintenance, restoration, enhancement, or protection of the environment where the regulatory process involves procedures for protection of the environment' (Class 8); and (iii) actions by agencies related to 'enforcement of a law, general rule, standard, or objective, administered or adopted by the regulatory agency' (Class 21). CEQA Guidelines §§ 15307, 15308 and 15321. Because the proposed Project is to be overseen by a regulatory agency, the Regional Board, and is designed to protect water quality and beneficial uses in the San Diego Bay, it clearly falls within the scope of each of these exemptions."

This comment expresses an opinion about the San Diego Water Board's decision to prepare an EIR and is not a comment on the environmental analysis contained in the Draft PEIR. This comment will be included as part of the record and made available to the decision-makers prior to a final decision on the project. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary. See also response O-3-148.

O-3-145

The comment states: "In fact, the above-referenced categorical exemptions were cited in the first three iterations of the TCAO, released between 2005–2008, to support the Cleanup Team's then-position that the TCAO was exempt from CEQA review. Cleanup Team's California Environmental Quality Act Analysis for Shipyard Sediment Project; Tentative Cleanup and Abatement Order R9-2010-002, dated July 9, 2011 ('CUT's CEQA Analysis'); Tentative Cleanup and Abatement Order R9-2005-0126, released April 29, 2005; Tentative Cleanup and Abatement Order R9-2005-0126, released August 24, 2007; Tentative Cleanup and Abatement Order R9-2005-0126, released April 4, 2008. It was not until the fourth iteration of the TCAO, released on December 22, 2009, that the Cleanup Team dramatically reversed course and alleged that CEQA review was required because the Project 'presents unusual circumstances both with respect to its scope and unique characteristics.' CUT's CEQA Analysis, at 2, Section II(A)."

This comment expresses an opinion about the San Diego Water Board's decision to prepare an EIR and is not a comment on the environmental analysis contained in the Draft PEIR. This comment will be included as part of the record and made available to the decision-makers prior to a final decision on the project. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary. See also response O-3-148.

O-3-146

The comment states: "An exemption finding would be consistent with statewide practice and this Regional Board's prior practice of exempting cleanup and abatement orders, including orders for sediment remediation and dredging projects in San Diego Bay, and, as NASSCO repeatedly has asserted, also would avoid any unnecessary delay in the cleanup associated with the preparation and certification of an EIR."

This comment expresses an opinion about the San Diego Water Board's decision to prepare an EIR and is not a comment on the environmental analysis contained in the Draft PEIR. This comment will be included as part of the record and made available to the decision-makers prior to a final decision on the project. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary. Of note, the role of the Lead Agency for a project includes the discretion to determine when unusual circumstances warrant the preparation of a more comprehensive environmental document. See also response O-3-148.

O-3-147

The comment states: "NASSCO recognizes that a categorical exemption to CEQA may not apply where a project includes 'unusual circumstances' and those unusual circumstances present a 'reasonable possibility of a significant effect on the environment.' *Banker's Hill, Hillcrest, Park West Community Preservation Group v. City of San Diego*, 139 Cal. App. 4th 249, 278 (2006). Both of these prongs must be satisfied, however, as '[a] negative answer to either question means the exception does not apply.' Id. (quoting *Santa Monica Chamber of Commerce v. City of Santa Monica*, 101 Cal. App. 4th 786, 800 (2002)). Further, 'unusual circumstances' will not be found unless some feature distinguishes the project from other typical projects in the exempt class, such that the type of environmental impacts that may result are different than the type of environmental impacts likely to result from other typical projects within the class. E.g., *Santa Monica Chamber of Commerce*, 101 Cal. App. 4th at 801-803."

The comment provides information about CEQA. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary. See also response O-3-148.

O-3-148

The comment states: "In opposition to NASSCO's motion, the Cleanup Team argued that an EIR is required because the TCAO 'is the largest sediment remediation project in the history San Diego Bay' and thus is distinguishable from 'garden variety' Class 7, Class 8, and Class 21 projects because it is expected to require dredging of over 140,000 cubic yards of sediment. See Cleanup Team's Comments On The Applicability of a CEQA Categorical Exemption For Tentative Cleanup And Abatement Order R9-2010-0002, at 2 (emphasis added). The Cleanup Team further relied on a statement by David Gibson that the Project 'will result in more dredging and removal of sediments from San Diego Bay than all previous Cleanup and Abatement Orders combined.' Id. at n.1 (emphasis added). In addition, the Cleanup Team asserted that NASSCO's argument for an exemption was based on an improper supposition that 'large-scale dredging projects do not usually have a potential for significant adverse environmental impacts,' while, according to the Cleanup Team, the volume of this dredging project differentiated it from other dredging in San Diego Bay. Id.; see also CUT's CEQA Analysis, at 3, Section III(A) (citing the alleged unprecedented scope of the project, and referencing as factors supporting a finding of unusual circumstances its associated 'physical disturbance to the environment, including but not limited to, sediment movement, air quality impacts from diesel emissions from dredging equipment, and potential impacts to traffic patterns and noise from equipment operations in the area where the sediments will be dewatered and from which they will be transported.'); see also DTR, at 37-3."

The Lead Agency under CEQA is responsible for most decisions regarding the proper manner of complying with CEQA in considering and carrying out a project. The Lead Agency must conduct a preliminary review of a proposed activity to determine whether the activity is subject to CEQA and if it is exempt from CEQA. The San Diego Water Board determined that the proposal under consideration is a "project" as defined by CEQA Guidelines section 15180, that the undertaking may have a significant impact on the environment, and that an EIR must be prepared. Specifically, in Resolution No. R9-2010-0115 adopted on September 8, 2010, the San Diego Water Board found that because the TCAO presents unusual circumstances and there is a reasonable possibility of a significant effect on the environment due to the unusual circumstances, the TCAO is not exempt from CEQA and that an EIR analyzing the potential environmental effects of the TCAO should be prepared.[1]

Once a Lead Agency determines during its preliminary review that a proposed activity is a project subject to CEQA and is not exempt, it next determines whether to initiate preparation of an EIR or to complete an Initial Study to determine whether to prepare an EIR, a Negative Declaration, or a Mitigated Negative Declaration for the project. Upon preparation of an Initial Study (IS) for the Shipyard Sediment Remediation Project, the San Diego Water Board determined that a PEIR should be prepared to focus on significant effects of the proposed project and to satisfy the requirements of CEQA.

The comment includes information from sources and documents other than the Draft PEIR. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein.

O-3-149

The comment states: "Finally, the Cleanup Team contended that the above-referenced categorical exemptions contain exclusions where 'construction activities' are undertaken in the context of an otherwise exempt project, and that dredging of sediment constitutes a 'construction activit[y]' such that dredging cannot qualify for a categorical exemption under

[1] Draft Technical Report for Tentative Cleanup and Abatement Order No. R9-2011-0001, Finding 37, September 15, 2010.

CEQA Guidelines sections 15307, 15308 or 15321. Cleanup Team's Comments On The Applicability of a CEQA Categorical Exemption For Tentative Cleanup And Abatement Order R9-2010-0002, at 4. The Cleanup Team further opined that 'large-scale modifications' to the environment caused by the volume of dredging required for the Project precluded application of a categorical exemption, including the destruction of eelgrass habitat."

This comment expresses an opinion about the San Diego Water Board's decision to prepare an EIR and is not a comment on the environmental analysis contained in the Draft PEIR. This comment will be included as part of the record and made available to the decision-makers prior to a final decision on the project. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary. Of note, the role of the Lead Agency for a project includes the discretion to determine when unusual circumstances warrant the preparation of a more comprehensive environmental document. See also response O-3-148.

O-3-150

The comment states: "But the DEIR disproves the Regional Board's finding that 'unusual circumstances' required an EIR for this particular sediment remediation project, which calls for the dredging of approximately 143,000 cubic yards of sediment. The DEIR indicates that during an 11-year period between 1994–2005, 'an average of approximately 245,000 cubic yards of sediment was dredged from the Bay each year,' including maintenance and environmental dredging, with an annual total as high as 763,000 cubic yards. The DEIR further indicates that the project dredge volume 'falls within the historic ranges for the yearly overall volume of dredging activity in San Diego Bay.' DEIR, at 4-2 (emphasis added)."

The comment fails to recognize the San Diego Water Board's discretion as the CEQA Lead Agency to distinguish between maintenance dredging and remedial cleanup dredging and between projects of different scale and purpose. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. See also response O-3-148.

O-3-151

The comment states: "Because the DEIR confirms that the volume of dredging for this Project is consistent with the normal amount of dredging conducted in San Diego Bay each year (albeit the Project is a larger sediment remediation CAO than other sediment dredging in San Diego Bay), there are no 'unusual circumstances' warranting CEQA review for this but not other dredging projects. Accordingly, NASSCO reasserts its objection to the preparation of the EIR, and requests that the Regional Board refrain from further CEQA review of the Project and elect not to prepare or certify a Final EIR."

This comment expresses an opinion about the San Diego Water Board's decision to prepare an EIR and is not a comment on the environmental analysis contained in the Draft PEIR.

This comment will be included as part of the record and made available to the decision makers prior to a final decision on the project. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary. See also response O-3-148.

O-3-152

The comment states: "In addition, so that the public may better understand the type and scope of dredging typically conducted in San Diego Bay, NASSCO requests that the Regional Board make publically available and include in the Administrative Record the records of dredging in San Diego Bay between 1994–2005, referenced at page 4-2 of the DEIR, as well as any additional records reflecting past dredging in San Diego Bay or reasonably anticipated future dredging. The Regional Board should also explain the extent to which it does or does not regularly analyze sediment dredging projects under CEQA, and indicate each dredging project in San Diego Bay that has undergone CEQA review."

The comment suggests that historical records be made available. San Diego Water Board project records are publicly available documents subject to a public records request. The San Diego Water Board Cleanup Team does not have a need to incorporate the dredging records cited by NASSCO in the Administrative Record for the TCAO. NASSCO may wish to submit a motion to admit these records into the administrative record for the TCAO proceedings as contemplated under Phase V.A. of the June 8, 2011, Third Amended Order of Proceedings.

O-3-153

This comment is the certification of authenticity of electronic submittal by Jeffrey P. Carlin. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-154

This comment is the declaration and proof of service. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-155

This comment is a cover letter that is introductory to other comments. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-156

This comment is an introduction of the memorandum by Anchor QEA. It summarizes the commenter's estimate of the costs of mitigation. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-157

The comment expresses the view that some of the mitigation measures included in the Draft PEIR are "typical" for a remedial dredge project and some are not. The comment does not contain any specific or substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary. It is noted that the comment defines "Typical environmental mitigation measures for sediment remediation projects" based upon two projects, the Campbell Shipyard Cleanup and the Rhine Channel Sediment Cleanup in San Diego Bay and Newport Beach, respectively. The San Diego Water Board notes that Anchor QEA, the author of this comment, was the consultant for the City of Newport Beach for the Rhine Channel project. The comparison of BMP requirements using two remediation projects to discuss mitigation measures status as "typical" or feasible is not sufficient for validating the necessity or removal of proposed mitigation measures. The San Diego Water Board Cleanup Team utilized multiple guidance documents and references when evaluating mitigation measures and past projects including:

- Clean Water Act section 404(b)(1) guidelines – Subpart H.
- Clean Water Act section 401 Water Quality Certification No. 10C-017 for the BAE Systems Pride of San Diego Dry Dock Dredging Project.
- California Regional Water Quality Control Board, San Diego Region. 2004. Order No. R9-2004-0295 Waste Discharge Requirements for the Port of San Diego Campbell Shipyard Sediment Cap Closure and Post Closure Maintenance San Diego Bay. October 2004.
- National Marine Fisheries Service, Southwest Regional Office. 2010. Turbidity Flow Chart. Available on the web at: http://www.swr.noaa.gov/efh.htm.
- U.S. EPA. 2004. Engineering Performance Standards Hudson River PCBs Superfund Site: Volume 5: Appendix – Case Studies of Environmental Dredging Projects. U.S. Environmental Protection Agency, Region 2, New York, NY. April 2004.
- U.S. EPA. 2005. Contaminated Sediment Remediation Guidance for Hazardous Waste Sites. EPA-540-R-05-012. OSWER 9355.0-85. Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency. December 2005.
- U.S. Army Corps of Engineers (USACE). 2001. Dredge Bucket Comparison Demonstration at Boston Harbor. ERDC/CHL CHETN-VI-35. March 2001.
- USACE. 2008a. The Four Rs of Environmental Dredging: Resuspension, Release, Residual, and Risk. USACE Engineer Research and Development Center, Vicksburg, MS. ERDC/EL TR-08-4, February, 2008. Available on the web at http://www.epa.gov/superfund/health/conmedia/sediment/pdfs/summaryreport.pdf.

- USACE. 2008b. Technical Guidelines for Environmental Dredging of Contaminated Sediments. USACE Engineer Research and Development Center, Vicksburg, MS. ERDC/EL TR-08-29, September 2008.

O-3-158

The comment introduces a table that summarizes the commenter's cost estimation and states that impacts to construction costs are compounded when various measures are implemented in combination. The comment does not contain any specific or substantive statements or questions about the Draft PEIR or the analysis therein. Under CEQA, lead agencies must avoid or reduce the impacts of a proposed project by adopting feasible project alternatives or mitigation measures. PRC 21002-21002.1. "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors. Cost in and of itself is not necessarily a determination of a measure's "feasibility" under CEQA.

The purpose of including mitigation measures in an EIR is to identify mitigation measures that could minimize significant adverse impacts.

O-3-159

The comment indicates that a key consideration is if the mitigation measures are required or recommended by the DEIR. Mitigation included in the Draft PEIR is required.

Future decisions and implementing actions following certification of the PEIR and approval of the Project will be subject to subsequent environmental review pursuant to CEQA.

O-3-160

The comment pertains to Mitigation Measure 4.2.1 and states: "This mitigation measure requires that 'automatic systems' be used to monitor turbidity outside of the construction area. While automatic monitoring of dredging position and progress is a standard and beneficial industry practice (and a key monitoring element of the Section 401 WQC), the automated monitoring of turbidity is not, aside from a select few instances known nationally. In fact, requiring automated monitoring is likely to have significant adverse effects on operations owing to the difficulty of discerning meaningful turbidity results from ambient conditions and statistical 'noise.' Turbidity is a complex phenomenon and subject to a host of environmental variables as well as to the ever-changing conditions of construction. Successful monitoring of turbidity effects, and interpretation of the monitoring data, requires the judgment of a skilled operating team so that external variables can be properly taken into account. Automating the monitoring is likely to lead to significant uncertainty and false positives (unwarranted indications of exceedances) resulting from external factors such as currents, weather, and vessel traffic as well as a frequent need to refine or clarify what the automatic monitors are indicating, which is likely to lead to confusion and loss of time on the project."

As stated by the comment, automated turbidity monitoring has been utilized nationally as a mitigation measure during remedial dredging projects. While the Cleanup Team agrees with the complexity involving turbidity, this complexity in no way discounts the important role environmental factors play in influencing dredge operations and the resulting turbidity. The complexity of turbidity should not serve as a rationale for a relaxing of water quality standards or of required BMPs. The comment is also misleading, suggesting that automated turbidity monitoring has no human input or involvement in regard to sampling location and frequency (i.e., selecting an ambient station to detect environmental factors), trigger levels, required responses or combination with manual and visual monitoring. The Draft PEIR does not provide specific deployment locations, sampling frequency, NTU trigger levels, or required operator responses. This flexibility is available for automated systems, though it is requested by the comment under the impetus that it is only available for manual monitoring. It is expected that automated monitoring will be utilized in a cost-effective manner combined with manual and visual monitoring. This approach is reflecting in the referenced mitigation measure:

> "Automatic systems shall also be used to monitor turbidity and other water quality conditions in the vicinity of the dredging operations to facilitate real-time adjustments by the dredging operators to control temporary water quality effects. The automatic systems shall include threshold level alarms so that the operator or other appropriate project personnel recognize that a particular system within the operation has failed. If the threshold-level alarms are activated, the dredge operator shall immediately shut down or modify the operations to reduce water quality constituents to within threshold levels. The San Diego Water Board shall further verify that the contractor/dredge operator is using visual monitoring and recording of water turbidity during the dredging operations, including the temporary cessation of dredging if exceedances of the turbidity objective in the Basin Plan occur."

Therefore, the San Diego Water Board concludes that the mitigation is appropriate and no change to the Draft PEIR is warranted.

O-3-161

The comment states: "Potential slowdowns to the dredging process, even if limited in duration, will result in considerable extra costs, because dredging effectiveness is primarily driven by production rate. Working in these active shipyards is already subject to a number of scheduling challenges. We expect that adding the uncertainty of an automated turbidity monitoring system could add as much as $500,000 to $1 million to total project costs, simply through the occasions of unnecessary work slowdown and uncertainty."

Please see response to comment O-3-160. "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors. Cost in and of itself is not necessarily a determination of a measure's "feasibility" under CEQA.

O-3-162

The comment states: “Alternatively, implementation of a water quality monitoring program that employs the manual collection of turbidity values allows for appropriate adjustments for tidal exchanges, wind, and vessel traffic. This flexibility will allow the contractor to adjust dredging and barge-loading methodologies (e.g., speed and bucket type) based on visual assessment at both the early warning and compliance distances from the construction area. In turn, manual collection of water quality results in better production rates and lower costs while providing better environmental protectiveness.”

Please see response to comment O-3-160. The San Diego Water Board Cleanup Team concludes that the mitigation is appropriate and no change to the Draft PEIR is warranted. The TCAO notes that the specific actions to be taken by the responsible parties for the cleanup will be described in a Remedial Action Plan (RAP) that is to be prepared and submitted to the San Diego Water Board. Future decisions and refinement of implementing actions following certification of the PEIR and approval of the project will be subject to subsequent environmental review pursuant to CEQA.

O-3-163

The comment pertains to Mitigation Measure 4.2.2 and states: “This mitigation measure lists a number of best management practices (BMPs) intended to meet water quality objectives during the dredging work. Some of these BMPs are standard and would customarily be included in the project specifications, such as prohibitions against stockpiling, spillage, and splashing; bucket closure; and debris grid management. Other listed BMPs, however, are not representative standard practice. While there have been limited instances known nationally where they have been applied to highly toxic cleanup events, at this project they will add significantly to construction costs (and potentially slowing down the rate of progress) without a commensurate gain in environmental protectiveness. Examples of such BMPs include:”

As specified by the comment, the BMPs prescribed by the comment have been utilized nationally, and even locally, for contaminated sediment cleanups. For example, dual layers of turbidity control (curtains or otherwise) have been utilized for multiple environmental dredging projects (U.S. EPA 2004), and at shipyard sites in San Diego Bay. The comment provides no evidence that there is no demonstrable benefit from requiring dual curtains. Specialized environmental buckets, including the one prescribed in the Draft PEIR, have been utilized in multiple dredging projects nationally (U.S. EPA 2004) and recently by BAE Systems for dry dock dredging that included contaminated sediments. Use of “Clam Vision” is a mitigation measure to ensure that sufficient dredging in proper locations is performed to remove contaminated sediment without over-filling, to prevent excessive dredge passes, and to prevent unnecessary dredging and dredging non-target areas, all of which would result in unnecessary increases in potential water quality impacts. The importance of the mitigation measures are acknowledged in previous comments, which state “automatic monitoring of dredging position and progress is a standard and beneficial industry practice.”

O-3-164

The comment states: "Double silt curtain enclosure. Although double silt curtains were used for the Campbell Shipyard project in San Diego, they are not a standard practice. Single silt curtains, for instance, have been required and successfully used for recent and ongoing sediment cleanup projects in Newport Beach and at the Port of Long Beach. Employing double silt curtains adds considerable cost and management time without any demonstrated environmental benefit. We estimate that this measure could add $250,000 to $500,000 to project costs, owing not only to the increased cost of material purchase but also to the greater effort required to manage and move the double silt curtain."

See response to comment O-3-163. Cost in and of itself is not necessarily a determination of a measure's "feasibility" under CEQA.

O-3-165

The comment states: "Specialized bucket additions and controls (e.g., closure switches and Clam Vision TM). These additions and controls would add cost due to their purchase, installation, upkeep, calibration, and management and would pose the risk of complicating the contractor's work by providing ambiguous or misleading data owing to the many variables that are in effect during dredging. We envision this measure adding as much as $250,000 to $500,000 to project costs. Alternatively, a practical water quality control and monitoring plan (as was used successfully for the Campbell Shipyard project in 2005/2006) will ensure compliance with the Section 401 WQC and allow the contractor to use the right equipment for the conditions while keeping production efficient."

See response to comment O-3-163. Cost in and of itself is not necessarily a determination of a measure's "feasibility" under CEQA.

O-3-166

The comment states: "Air curtains. The MMRP suggests these as a supplement to silt curtains for better controlling loss of suspended sediment and enhancing worker safety. We are not aware of any regional precedent for using air curtains for these reasons, and their effectiveness in this regard appears highly doubtful. Air curtains would add considerable cost and would be time-consuming to install, maintain, and continually relocate as the dredging proceeds. We estimate that this measure could add as much as $300,000 to $500,000 to project costs, owing not only to the increased cost of material purchase but also to the greater effort required to manage and move the air curtain assembly."

See response to comment O-3-163. To clarify, the Mitigation Measure states that the contractor may use air curtains in conjunction with silt curtains to contain re-suspended sediment, to enhance worker safety, and allow barges to transit into and out of the work area without the need to open and close silt curtain gates. A final determination on the applicability of air curtains to the project will be made during the final design stage and preparation of the RAP. A regional precedent is not required for their use in the proposed project.

O-3-167

The comment pertains to Mitigation Measure 4.2.3 and states: "This mitigation measure stipulates that double silt curtains (previously discussed) are to 'fully encircle the dredging equipment and the scow barge being loaded with sediment.' Although a silt curtain enclosure around the dredging barge is a typical requirement, including the scow barge in the enclosure would have a significant impact on operations. Each time the scow barge is loaded, it would have to wait within the silt curtain enclosure until water quality within the curtains can be documented as meeting water quality criteria and then for the curtain enclosure to be opened. This delay on the contractor's work efforts will increase dredging cycle times and, therefore, significantly slow down the necessary progress of the cleanup work. We also anticipate an increase to the dredging unit cost that could add as much as $1.5 to $2 million to project costs, with little to no resulting environmental benefit. With the appropriate controls on scow leakage and overflow, it would be unnecessary and counterintuitive to require that the scows also be situated within the silt curtains."

With the implementation of proper dredging and barge design and operation controls (BMPs), time limitations for dredge barge movements are expected to be minimal. Enclosing the scow barge provides a treatment control mitigation measure that is in place if needed due to source control BMP failure. This clearly is an environmental benefit. This requirement was utilized by BAE Systems for dry dock dredging that included contaminated sediments. It is also unclear how this will add to the cost of the dredging unit.

O-3-168

The comment pertains to Mitigation Measure 4.2.7 and states: "This mitigation measure anticipates a fundamentally different concept for the underpier remediation aspect of the project work. Prior discussions envisioned that a cover layer of sand or a sand-gravel mixture would be placed below piers, as a means of lessening the incidence of exposed contaminants and augmenting the ongoing process of sedimentation. Installing the cover to be a permanent feature that is fully protected against erosion requires the addition of a surficial armoring layer, generally comprised of a rock product, separated from the underlying sand by an intervening "filter layer" of gravel, and potentially a layer of filter fabric. The resulting sequence of aggregate material layers would in fact be 5 to 7 feet thick, comprised of layers of sand, gravel, and rock. Not only is such a sediment cover a far more complex element to design and construct, it also raises the risk of imposing stresses on the foundations and soils that underlie the overwater marine structures. Clearly, this measure has tremendous impacts on the project's cost and timeframe. We estimate that the cost impact would be as much as $5 to $7 million, which makes it the most costly of all the mitigation measures described in the MMRP, because the material and placement costs increase so substantially."

The clean sand cover under piers is included in the TCAO and in the project description for the Draft PEIR. Because portions of the remedial areas (approximately 2.4 acres) are located under piers and cannot be feasibly dredged without impacting the infrastructure, these areas will be covered with a layer of clean sand to contain contaminated sediments. As specified in Mitigation Measures 4.2.7 and 4.2.8, the clean sand covers will be designed and installed to reduce the potential for sediment and contaminants to be released into the water column. The comment states that the measure requires "the cover to be a permanent feature that is fully protected against erosion." This is the intent of the clean sand cover feature of the project. A temporary cover that would continuously erode would not be consistent with the intent and requirements of the TCAO. See also response O-3-58.

O-3-169

The comment pertains to Mitigation Measure 4.2.8 and states: "Hydraulic placement of sand cover material might in fact be a feasible and cost-effective option for some contractors, but including hydraulic placement as a project requirement will unnecessarily disrupt the ability of otherwise qualified contractors to submit competitively priced bids. Other feasible methods are also available for placement of sand and gravel materials below overwater structures, including long-reach conveyors and reticulated bucket arms. Rather than making hydraulic placement a project requirement, we recommend instead to let individual contractors determine whether they will use mechanical or hydraulic methods to place sand cover materials. In other words, we recommend approaching the project requirements in much the same way as was done for the successful Campbell Shipyard project. Otherwise, the cost difference could be substantial, as much as $1.5 to $2 million for this relatively high-cost element of the project."

The mitigation requirement for hydraulic placement is discussed in Appendix C – Water Quality Technical Report (Section 3), which states the following:

> "During clean sand cover, the contractor should place the initial layers of the cover in thin lifts by hydraulically placing the material from a barge. This placement method reduces the vertical impact and lateral spreading of the cover material, thus reducing the potential for resuspending the contaminated surface sediments. Controlled placement also minimizes the mixing of cover and underlying sediment by allowing the sediment to slowly gain strength before subsequent layers are deposited. Operational controls such as silt curtains should be employed during the sand cover placement."

The hydraulic placement of sand cover material is a feasible approach. Please see information from the EPA regarding its contaminated sediment program at: www.epa.gov/glnpo/sediment/iscmain/four.html.

The ability of some contractors to place bids is not a consideration factor in the selection of mitigation measures to protect water quality.

O-3-170

The comment pertains to Mitigation Measure 4.4.1 and states: "This mitigation measure anticipates a restriction on haul times to the hours between 7 am and 7 pm only. While these construction times are consistent with the San Diego Municipal Code, imposition of this ordinance will delay the critical transport of sediment off site. The common and recommended practice for critical environmental cleanups, such as this one, is to obtain a temporary variance from the City Ordinance so that the work can be completed in as timely a fashion as possible. Because sediment disposal is a high-cost item on the project, any change will result in a proportionately high impact. We estimate that restricting truck haul times could add as much as $2 to $4 million is cost by significantly complicating the sediment transport operations and hindering the rate and progress of the cleanup action."

The comment appears to have incorrectly interpreted the cited mitigation measure, which states:

> "The contractor shall ensure, and the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) and City of San Diego Noise Control Officer shall verify, that treatment and haul activity in the City of San Diego is prohibited between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day, or on legal holidays as specified in section 21.04 of the San Diego Municipal Code, with the exception of Columbus Day and Washington's Birthday, or on Sundays, that would create disturbing, excessive, or offensive noise unless a permit has been applied for and granted beforehand by the Noise Abatement and Control Administrator in conformance with San Diego Municipal Code section 59.5.0404."

The mitigation measure clearly states that the project may apply for a permit to conduct activities outside of the specified hours. For reference San Diego Municipal Code section 59.5.0404 (a) states:

> "It shall be unlawful for any person, between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day, or on legal holidays as specified in Section 21.04 of the San Diego Municipal Code, with exception of Columbus Day and Washington's Birthday, or on Sundays, to erect, construct, demolish, excavate for, alter or repair any building or structure in such a manner as to create disturbing, excessive or offensive noise unless a permit has been applied for and granted beforehand by the Noise Abatement and Control Administrator. In granting such permit, the Administrator shall consider whether the construction noise in the vicinity of the proposed work site would be less objectionable at night than during the daytime because of different population densities or different neighboring activities; whether obstruction and interference with traffic particularly on streets of major importance, would be less objectionable at night than during the daytime; whether the type of work to be performed emits noises at such a low level as to not cause significant

> disturbances in the vicinity of the work site; the character and nature of the neighborhood of the proposed work site; whether great economic hardship would occur if the work were spread over a longer time; whether proposed night work is in the general public interest; and he shall prescribe such conditions, working times, types of construction equipment to be used, and permissible noise levels as he deems to be required in the public interest."

Furthermore, the TCAO, Section G. provisions requires that the Dischargers "…properly manage, store, treat, and dispose of contaminated soils and ground water in accordance with applicable federal, state, and local laws and regulations." The San Diego Water Board understands that activities may occur continuously throughout the day in San Diego so long as it does not "…create disturbing, excessive or offensive noise unless a permit has been applied for and granted beforehand…" per San Diego Municipal Code 50.5.0404 Construction Noise.

O-3-171

The comment pertains to Mitigation Measures 4.5-7 through 4.5-9, and states: "It is expected that the proper application of operational controls and BMPs, as will be detailed in the Section 401 WQC, in combination with effective construction quality assurance will be successfully able to limit impacts to biological resources. Further, water quality impacts that might result from the work are expected to be short-term in duration. Nevertheless, the use of biological monitors on such projects is not without precedent and can be completed without incurring significant project delays, although it does add cost to the work effort. We estimate that the net cost could be as much as $250,000 to $500,000."

Mitigation Measures 4.5.7 and 4.5.8 are intended to reduce project impacts to turtles and marine mammals. Mitigation Measure 4.5.9 is intended to reduce project impacts to California least tern and other special-status seabirds and waterfowl. Refer to 16 U.S.C. §1561 et seq. for a schedule of penalties associated with violations of the Federal Endangered Species Act.

The San Diego Water Board Cleanup Team agrees that the proper application of water quality BMPs is sufficient to adequately reduce impacts to biological resources. Furthermore, the use of biological monitors, which are commonplace on dredge and fill projects throughout the San Diego Region, is considered to be a necessary element to confirm that the proper BMPs are in place during all project phases, and that water quality and biological BMPs are being implemented properly and successfully. Consistent successful implementation of required mitigation will help to ensure that unnecessary work stoppages are avoided. Additionally, the mitigation measures prescribed for on-site monitors are flexible, with the number of monitors not being prescribed and the minimum frequency described as once per week. However, the comment states that a monitor can be utilized without significant project delays. Thus, it is unclear if the cost estimates provided are the costs for the monitor or the combined costs for presumed slowdowns and BMP costs for a monitor that identifies a lack of, or improperly implemented, BMPs. Cost in and of itself is not necessarily a determination of a measure's "feasibility" under CEQA.

O-3-172

The comment pertains to Mitigation Measures 4.6.9 through 4.6.10 and states: "This set of mitigation measures discusses the use of various technologies for reducing air emissions from construction equipment engines to the extent that they are readily available and cost effective in the San Diego Air Basin (SDAB). Specifically identified measures include the use of engine catalysts, low-NO_X fuels, and alternative fuels. Because of the clause regarding their use only when available and cost effective, the imposition of these measures on construction costs is restricted. In the case of low-NO_X fuels, the MMRP defines cost effective as up to 125 percent of the cost of diesel. We anticipate that these requirements will increase overall costs by approximately $100,000 to $200,000."

This comment summarizes the commenter's estimate of the costs of mitigation. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-173

The comment pertains to Mitigation Measure 4.6.15 and the use of "Simple Green" on an as-needed basis.

See response to comment O-3-100. The San Diego Water Board agrees with the comment and the Draft PEIR has been clarified as suggested. See Appendix A, Errata.

O-3-174

This comment is a table summarizing cost impacts of mitigation. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary. Also, please see responses to the comments above.

O-3-175

This comment is the certification of authenticity of electronic submittal by Jeffrey P. Carlin. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-176

This comment is a cover letter that is introductory to other comments. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-177

This comment is an introduction of the memorandum by Exponent. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-178

The comment pertains to existing environmental conditions, and notes that the Draft PEIR relies on information included in the TCAO and DTR.

Please see response to comment O-3-4.

O-3-179

The comment pertains to existing environmental conditions, and expresses an opinion regarding the beneficial use impairment.

This comment expresses an opinion about the project and is not a comment on the environmental analysis contained in the Draft PEIR. This comment will be included as part of the record and made available to the decision-makers prior to a final decision on the project. Refer to responses O-3-3 and O-3-4 for further discussion of environmental baseline.

O-3-180

The comment pertains to existing environmental conditions, and expresses an opinion regarding the beneficial use impairment.

This comment expresses an opinion about the project and is not a comment on the environmental analysis contained in the Draft PEIR. This comment will be included as part of the record and made available to the decision-makers prior to a final decision on the project. Refer to responses O-3-3 and O-3-4 for further discussion of environmental baseline.

O-3-181

The comment pertains to existing environmental conditions, and expresses an opinion regarding the beneficial use impairment.

This comment expresses an opinion about the project and is not a comment on the environmental analysis contained in the Draft PEIR. This comment will be included as part of the record and made available to the decision-makers prior to a final decision on the project. Refer to responses O-3-3 and O-3-4 for further discussion of environmental baseline.

O-3-182

The comment pertains to existing environmental conditions, and expresses an opinion regarding the beneficial use impairment.

This comment expresses an opinion about the project and is not a comment on the environmental analysis contained in the Draft PEIR. This comment will be included as part of the record and made available to the decision-makers prior to a final decision on the project. Refer to responses O-3-3 and O-3-4 for further discussion of environmental baseline.

O-3-183

The comment pertains to existing environmental conditions; specifically, stormwater runoff and a source of contamination in the existing condition.

Please see response to comment O-3-3.

O-3-184

The comment pertains to project alternatives and summarizes the alternatives evaluated in the Draft PEIR.

The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-185

The comment pertains to project alternatives, and notes that the dredging method and dredge footprint is the same for all alternatives, other than the No Project Alternative.

The San Diego Water Board Cleanup Team concurs with the comment.

O-3-186

The comment pertains to project alternatives and notes that a monitored natural attenuation alternative is not included.

Please see response to comment O-3-2.

O-3-187

The comment pertains to Alternative 1 and claims that it is included only because of the CEQA requirement to do so.

The comment is correct in that the range of alternatives presented in the Draft PEIR is consistent with the requirements of CEQA. As stated in the Draft PEIR, the No Project Alternative does not meet the project objectives.

O-3-188

The comment pertains to Alternative 2, the Confined Aquatic Disposal Alternative, and states that there is insufficient detail to compare the alternative to the proposed project and to assess costs and benefits.

CEQA Guidelines (section 15126.6) provide information on the level of discussion necessary when considering alternatives:

> (d) Evaluation of alternatives. The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed. (*County of Inyo v. City of Los Angeles* (1981) 124 Cal. App. 3d 1).

For this alternative, and subsequent comments on the other alternatives, the level of prescribed detail is sufficient to determine if reasonable alternatives would eliminate and/or reduce significant unavoidable impacts when compared to the proposed project. No reported CEQA case has suggested or required a level of detail similar to that of the proposed project, including when an alternative may result in significant effects beyond or in addition to those of the proposed project: "If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed." (CEQA Guidelines section 15126.6 (d), citing *County of Inyo v. City of Los Angeles* (3d Dist. 1981) 124 Cal. App. 3d 1 [177 Cal. Rptr. 479]).

With regard to the level of information required for consideration in the Draft PEIR, the alternatives presented in the Draft PEIR are sufficient for the EIR tiering process, and is consistent with applicable code and CEQA Guidelines (Public Resources Code sections 21068.5 and 21093(b), CEQA Guidelines section 15152). Please refer also to Response O-4-6. Once a project has been selected, detailed analyses will be provided in a site-specific environmental document, including any staging area(s) to be used and any potential use of a Confined Aquatic Disposal facility.

O-3-189

The comment pertains to Alternative 3, the Convair Lagoon Alternative, and expresses an opinion that the greater level of detail presented for Alternative 3 could imply that this is the preferred alternative.

The Draft PEIR includes the Convair Lagoon confined disposal facility as a project alternative for consideration consistent with the requirements of CEQA. The Draft PEIR does not choose a preferred alternative. The Draft PEIR also clearly states that creation of a confined disposal facility would require significant levels of open water and eelgrass creation mitigation, and though potential sites are discussed, no specific site is identified. Should this alternative be selected, the evaluation of potential mitigation sites will be conducted by the San Diego Water Board and the Unified Port of San Diego through consultation with the appropriate regulatory permitting process, which is also explained in the Draft PEIR. The Convair Lagoon Alternative was not identified as an Environmentally Superior Alternative to the proposed project and would require mitigation measures in addition to those required for the proposed project.

O-3-190

The comment pertains to Alternative 3, the Convair Lagoon Alternative, and the increased impacts to aquatic habitat compared to the proposed project.

The San Diego Water Board Cleanup Team concurs with the comment.

O-3-191

The comment pertains to Alternative 3, the Convair Lagoon Alternative, and notes that a specific mitigation location is not proposed. The comment also states that the specific off-site disposal locations for Alternatives 2 and 4 are not identified in the Draft PEIR.

The Draft PEIR presents a range of potential eelgrass mitigation sites (see Table 5.25). The eelgrass mitigation is consistent with the requirements of CEQA because available means of mitigation the impact are identified, and performance standards, including mitigation ratio, are included. Please see response to comment O-3-188 regarding the level of detail required for the alternatives discussion.

O-3-192

The comment pertains to Alternative 3, the Convair Lagoon Alternative, and notes that there is a risk of failure and recontamination due to a seismic event.

Seismic considerations are addressed in Section 5.10.6 of the Draft PEIR and hazards are addressed in Section 5.10.8, and Accidental Release of Hazardous Materials is addressed under Threshold 5.10.8.2: Accidental Release of Hazardous Materials.

As explained in the Draft PEIR, compliance with the applicable federal, state, and local regulations and implementation of the Mitigation Measures 4.3.1 through 4.3.8, listed for the proposed project in Section 4.3, would reduce the potential for the Convair Lagoon to create a significant hazard to the public or the environment through the accidental release of hazardous materials.

Furthermore, Mitigation Measure 5.10.6.1 requires a detailed site-specific geotechnical investigation to determine specific geologic recommendations for the development of the containment barrier and storm drains. Areas of hydro-collapse, soft ground, expansive soils, compressible soils, liquefaction, shallow groundwater, and corrosive soils will be identified as part of the geotechnical investigation. The investigation will specifically address the proposed containment barrier, storm drains, and asphalt improvement stability in these identified geologic hazard areas. The geotechnical investigation shall be submitted to the San Diego Water Board for review and approval, prior to the issuance of a construction permit. The geotechnical investigation will comply with the specifications provided in the Naval Facilities Engineering Command (NAVFAC), DM-7.2, Foundations and Earth Structures, dated September, as well as the City of San Diego Building Division plans and the City of San Diego Engineering Department local grading ordinances. Recommendations made in conjunction with the geotechnical investigations will be implemented during construction. The qualified geologist shall periodically confirm that these measures are being implemented, including (as appropriate) but not necessarily limited to the following actions:

1. Over-excavate unsuitable materials associated with the confinement structure and replace them with imported engineered fill.
2. Confine unstable soils to deeper fill areas of the site.
3. Perform densification of soils in the area beneath the proposed containment structure through geotechnical engineering methods such as stone columns, compaction grouting, or deep dynamic compaction.
4. Select an engineering foundation design to accommodate the expected effects of liquefaction. Examples of types of foundation design that might be appropriate given the soil conditions include gravel bedding for the storm drain pipes and a pipe bell with flexibility to accommodate differential settlement.
5. Consider potential corrosion issues related to storm drain pipe degradation in the design of this improvement where it would contact corrosive soils or be subject to other corrosive forces.
6. Establish and implement a long-term monitoring and repair program to monitor the integrity of the asphalt, containment barrier and storm drains. Key features of the program include determination of the periodic review, the type of review, identification of potential problems that may occur in the future, and the methods that would be used to rectify any problems discovered.

7. The San Diego Water Board shall verify implementation of this mitigation measure.

The San Diego Water Board Cleanup Team finds that this mitigation measure is sufficient to reduce the potential impacts for the Convair Lagoon CDF Alternative from a seismically induced event to less than significant.

O-3-193

The comment pertains to Alternative 3, the Convair Lagoon Alternative, and refers to the risk of leakage of failure of existing storm drains the possibility of deposition of additional contaminants from storm drains.

Please see response to comment O-3-3 regarding the potential for recontamination from stormwater. Existing stormwater conditions are not an impact of the proposed project or project alternatives.

O-3-194

The comment pertains to Alternative 3, the Convair Lagoon Alternative, and states that the contaminants under the existing sand cap in the Lagoon are not quantified.

CEQA Guidelines (section 15126.6) provide information on the level of discussion necessary when considering alternatives:

> (d) Evaluation of alternatives. The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed. (*County of Inyo v. City of Los Angeles* (1981) 124 Cal. App. 3d 1).

For this alternative, and subsequent comments on the other alternatives, the level of prescribed detail is sufficient to determine if reasonable alternatives would eliminate and/or reduce significant unavoidable impacts when compared to the proposed project. No reported CEQA case has suggested or required a level of detail similar to that of the proposed project, including when an alternative may result in significant effects beyond or in addition to those of the proposed project: "If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed." (CEQA Guidelines section 15126.6 (d), citing *County of Inyo v. City of Los Angeles* (3d Dist. 1981) 124 Cal. App. 3d 1 [177 Cal. Rptr. 479]).

With regard to the level of information required for consideration in the Draft PEIR, the alternatives presented in the Draft PEIR are sufficient for the EIR tiering process, and is consistent with applicable code and CEQA Guidelines (Public Resources Code sections 21068.5 and 21093(b), CEQA Guidelines section 15152). Please refer also to Response O-4-6. Once a project has been selected, detailed analyses will be provided in a site-specific environmental document.

Finally, the comment does not present information to suggest that the contaminants under the existing sand cap are bioavailable. The existing sand cap is part of the existing setting for the proposed projects. It is not the purpose of an EIR to evaluate or to mitigate existing conditions.

O-3-195

The comment pertains to Alternative 3, the Convair Lagoon Alternative, and suggests that a 4-inch asphalt concrete cap would be preferable to a 3-inch cap, and offers other design suggestions.

The comment will be made available to the decision-makers for consideration in the design phase should Alternative 3 be selected.

O-3-196

The comment pertains to Alternative 3, the Convair Lagoon Alternative; specifically the proposed extension of two storm drain pipes through the containment barrier.

The comment will be made available to the decision-makers for consideration in the design phase should Alternative 3 be selected.

O-3-197

The comment pertains to Alternative 3, the Convair Lagoon Alternative; specifically the potential return of water from the dredged material.

The comment will be made available to the decision-makers for consideration in the design phase should Alternative 3 be selected.

O-3-198

The comment pertains to Alternative 3, the Convair Lagoon Alternative; specifically the conceptual design of the containment barrier.

The comment will be made available to the decision-makers for consideration in the design phase should Alternative 3 be selected.

O-3-199

The comment pertains to Alternative 3, the Convair Lagoon Alternative, and requests additional detail with regard to the design of the energy dissipater.

Please see response to comment O-3-194 regarding the level of detail required for the alternatives discussion. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-200

The comment pertains to Alternative 3, the Convair Lagoon Alternative, and the effect of placing hard shoreline into the Bay on waves and erosion.

The San Diego Bay is a large body of water and active port that already has areas of shoreline that are rock revetment or other hard surfaces. The placement of a hard shoreline in the area of Alternative 3, similar to other locations in the Bay, is not expected to have substantial detrimental effects on waves or erosion. The comment will be made available to the decision-makers for consideration in the design phase should Alternative 3 be selected.

O-3-201

The comment notes that pozzolonic treatment will increase the weight of the treated dredge and therefore increase the cost of disposal.

Cost in and of itself is not necessarily a determination of a measure's "feasibility" under CEQA.

O-3-202

The comment notes that the Draft PEIR states that no dewatering of contaminated sediments would be required for the Convair Lagoon CDF Alternative; however, the Draft PEIR also notes that the 15 percent of sediments presumed to be hazardous would require dewatering.

The comment is correct. The approximately 85 percent of sediment that is contaminated but not considered hazardous would not require dewatering prior to disposal at the CDF. However, the approximately 15 percent of sediment that is considered hazardous and subject to upland disposal would be dewatered prior to disposal.

O-3-203

The comment notes that the future use of the Convair Lagoon parcel beyond serving as a CDF is not identified in the Draft PEIR.

Future use of the area for any use in addition to a CDF is not included in the proposed project, is not within the jurisdiction of the San Diego Water Board, and would be subject to subsequent CEQA review by the Unified Port of San Diego.

O-3-204

The comment pertains to the Nearshore CDF Alternative and notes that it is not possible to quantify the impacts or required mitigation for this alternative without a specific off-site disposal location and more details about the design of the CDF.

The comment is correct that the Nearshore CDF Alternative is presented in less detail than the Proposed Project or the Convair Lagoon Alternative. CEQA “does not require that every conceivable alternative be stated in the [EIR] nor that the alternatives that are stated be described in every possible detail … [w]hat is required is that the EIR give reasonable consideration to alternatives in light of the nature of the project” (see *City of Rancho Palos Verdes*, supra, 59 Cal. App. 3d at page 892). The San Diego Water Board Cleanup Team finds that the alternatives are appropriately described in sufficient detail for the comparison of impacts of the proposed project and to provide for meaningful public review and comment.

O-3-205

The comment pertains to the benefits of Monitored Natural Attenuation. Please see response to comment O-3-2.

O-3-206

The comment pertains to the No Project Alternative. Please see response to comment O-3-187.

O-3-207

The comment notes that Alternatives 2 and 4 are only qualitatively described. Please see response to comments O-3-194 and O-3-204.

O-3-208

The comment expresses an opinion that the Convair Lagoon CDF Alternative, Alternative 3, is presented with disproportionate detail indicating a favoring of this alternative. The Draft PEIR provides a reasonable range of project alternatives and potential staging areas and does not select a preferred alternative or staging area. The inclusion of more detailed information about the Convair Lagoon CDF Alternative is intended to illuminate the potential effects of such an alternative and in no way reflects a preferred course of action. As noted in the comment, the Convair Lagoon Alternative was not identified as an Environmentally Superior Alternative to the proposed project and would require mitigation measures in addition to those required for the proposed project in multiple areas, most significantly including water quality and biological resources.

O-3-209

The comment indicates that the Draft PEIR does not address the potential for inadvertent re-release of contaminants back into San Diego Bay through CAD or CDF. Refer to response O-3-105.

O-3-210

The comment sates that the Convair Lagoon CDF Alternative will have the highest ecological impacts of the alternatives presented in the Draft PEIR.

The Draft PEIR clearly states that creation of a confined disposal facility would require significant levels of open water and eelgrass creation mitigation and, though potential sites are discussed, no specific site is identified. Should this alternative be selected, the evaluation of potential mitigation sites will be conducted by the San Diego Water Board and the Unified Port of San Diego through consultation with the appropriate regulatory permitting process, which is also explained in the Draft PEIR. The Convair Lagoon Alternative was not identified as an Environmentally Superior Alternative to the proposed project and would require mitigation measures in addition to those required for the proposed project in multiple areas, most significantly including water quality and biological resources. Furthermore, the Convair Lagoon CDF Alternative for sediment disposal represents substantial regulatory obstacles with respect to permitting. Even assuming that a CDF could be permitted at Convair Lagoon, it is unlikely that it could be permitted in time to meet the contemplated TCAO implementation schedule.

O-3-211

The comment states that all of the three evaluated alternatives that include dredging will result in significantly more aquatic and shoreline habitat impacts than the proposed project, with additional risk of future failure and rerelease of contamination.

Please see response to comment O-3-192.

O-3-212

This comment is the list of references cited in the comment letter. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-213

This comment is a cover memorandum to the station data provided in Comment O-3-215.

The comment expresses the opinion that there is no evidence of significant impairment of beneficial uses of the Bay due to NASSCO sediment contamination, and that monitored natural recovery should be the preferred alternative. This comment expresses an opinion about the project and is not a comment on the environmental analysis contained in the Draft PEIR. This comment will be included as part of the record and made available to the decision-makers prior to a final decision on the project.

The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-214

This comment is a glossary of key terms used in the station data presented in Comment O-3-215. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-215

This comment is station data. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-216

This comment letter was submitted by the U.S. Fish and Wildlife Service in January 2011 (prior to the release of the Draft PEIR in June 2011) on an Addendum to the TCAO for the Teledyne Ryan Aeronautical site. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-217

This comment letter was submitted by the U.S. Fish and Wildlife Service in January 2011 (prior to the release of the Draft PEIR in June 2011) on an Addendum to the TCAO for the Teledyne Ryan Aeronautical site. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-218

This comment letter was submitted by the U.S. Fish and Wildlife Service in January 2011 (prior to the release of the Draft PEIR in June 2011) on an Addendum to the TCAO for the Teledyne Ryan Aeronautical site. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-219

This comment letter was submitted by the U.S. Fish and Wildlife Service in January 2011 (prior to the release of the Draft PEIR in June 2011) on an Addendum to the TCAO for the Teledyne Ryan Aeronautical site. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-220

This comment letter was submitted by the U.S. Fish and Wildlife Service in January 2011 (prior to the release of the Draft PEIR in June 2011) on an Addendum to the TCAO for the Teledyne Ryan Aeronautical site. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-221

This comment letter was submitted by the U.S. Fish and Wildlife Service in January 2011 (prior to the release of the Draft PEIR in June 2011) on an Addendum to the TCAO for the Teledyne Ryan Aeronautical site. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-222

This comment letter was submitted by the U.S. Fish and Wildlife Service in January 2011 (prior to the release of the Draft PEIR in June 2011) on an Addendum to the TCAO for the Teledyne Ryan Aeronautical site. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-223

This comment is a curriculum vitae/résumé. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-224

This comment is a curriculum vitae/résumé. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-225

This comment is a curriculum vitae/résumé. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

O-3-226

This comment is the certification of authenticity of electronic submittal. The comment does not contain any substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

GENERAL DYNAMICS

Letter Code: O-4

Date: August 1, 2011

O-4-1

The first part of the comment is introductory to other comments in the letter and notes that General Dynamics is a former lessee of the Convair Division, Lindbergh Field Plant. The letter states that: "As discussed below, General Dynamics has a number of significant concerns regarding the Draft PEIR's proposed Convair Lagoon Confined Disposal Facility ("CDF"). Specifically, General Dynamics is concerned that the Cleanup Team concludes in the Draft PEIR that spending millions of dollars to place contaminated sediments from the Shipyard Sediment Site back into the Bay, creating the Convair Lagoon CDF, is a potentially viable alternative for the Shipyard Sediment Site, particularly considering that the risk of recontamination cannot be eliminated."

This comment expresses an opinion about Alternative 3, the Convair Lagoon Confined Disposal Facility (CDF). Specifically the comment expresses concern that the Convair Lagoon CDF would introduce the possibility of recontamination of the San Diego Bay. This comment will be included as part of the record and made available to the decision-makers prior to a final decision on the project.

The Convair Lagoon CDF was included in the Draft PEIR consistent with the requirements of CEQA, which requires that the Lead Agency consider a range of potentially feasible alternatives to the proposed project. See Public Resources Code sections 21002 and 21081; see also CEQA Guidelines section 15126.6(f). "Feasible" means capable of being accomplished in a successful manner within a reasonable time, taking economic, environmental, legal, social and technological factors into account. (CEQA Guidelines section 15364.) The range of alternatives to be considered is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited ones that would avoid or substantially lessen any of the significant impacts of the project. "Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project" CEQA Guidelines section 15126.6(f). Additionally, CEQA does not require the consideration of alternatives that are incompatible with the fundamental objectives of the project or alternatives that would change the basic nature of the project.

As noted in Section 5.7.1 of the Draft PEIR, Alternative 3 would obtain the project objectives and would implement the San Diego Water Board's overall goal to improve water quality in San Diego Bay. Alternative 3 would remove the contaminated sediments within the remedial footprint and is consistent with the DTR for TCAO No. R9-2010-0002, Finding 30 (pages 30-5 and 30-6). Specifically:

- Alternative 3 would attain the cleanup levels and remediate areas as identified in the TCAO; therefore, Alternative 3 would protect the water quality of San Diego Bay for the use and enjoyment by the people of the state.
- Alternative 3 would reduce or minimize adverse effects to aquatic life beneficial uses, aquatic-dependent wildlife beneficial uses, and human health beneficial uses by the removal and/or covering of the contaminated sediments in the remedial footprint.
- Alternative 3 would implement a cleanup plan that would have long-term effectiveness and would realize long-term public benefits associated with the cleanup of the contaminated marine sediments; the site would no longer constitute a public nuisance.

The Draft PEIR provides a reasonable range of project alternatives and potential staging areas and does not select a preferred alternative or staging area. Once a project has been selected, detailed analyses will be provided in a site-specific environmental document, including any staging area(s) to be used.

O-4-2

The letter states that: "Despite significant risks and challenges associated with the construction and maintenance of a CDF, the Draft PEIR unduly emphasizes this alternative by including extensive discussion of Convair Lagoon, as well as unnecessary documentation pertaining to the demolition of General Dynamics' former Lindbergh Field Facility. In particular, Appendix A to Appendix K consists largely of dozens of forms from the Department of Parks and Recreation describing buildings formerly located at the General Dynamics Lindbergh Field Facility. These documents appear to have been included without any discernable or legitimate purpose, as they do not relate to the Shipyard Sediment Site cleanup, or to the pier and seaplane ramp proposed for demolition as part of the Convair Lagoon CDF."

As part of the Convair Lagoon Alternative, the concrete seaplane ramp and pier located on the site would be demolished. Both the seaplane ramp and the pier were constructed circa 1957. The discussion in Chapter 5.0 of the Draft PEIR provides an evaluation of the seaplane ramp and pier for eligibility of listing in the NRHP, the CRHR, the local register for the City of San Diego Historical Sites, and of qualifying as a historic resource under CEQA. The existing pier and seaplane ramp were previously part of a larger aircraft manufacturing complex that included several buildings, hangars, runways and testing sites for the aviation company Convair. The demolition of the seaplane ramp and pier was evaluated in the context of the larger aircraft manufacturing complex that had been present at the site. Therefore, the Department of Parks and Recreation (DPR) forms for the larger complex that forms the historic setting and background for the seaplane ramp and pier are appropriately included in Appendix K of the Draft PEIR.

The Draft PEIR provides a reasonable range of project alternatives and potential staging areas and does not select a preferred alternative or staging area. Once a project has been selected, detailed analyses will be provided in a site-specific environmental document, including any staging area(s) to be used.

O-4-3

The letter states that: “For the reasons discussed herein, General Dynamics objects to the Convair Lagoon CDF as a potential means for disposing of Shipyard Sediment Site sediments, and respectfully requests that all references to General Dynamics’ former Lindbergh Field facility within the DEIR be stricken.

“I. THE DEIR MUST FOCUS ON THE SHIPYARD SEDIMENT SITE, NOT CONVAIR LAGOON

“The Cleanup Team’s purpose in issuing the DEIR is to ‘analyze the [Shipyard Remediation Project’s] potential impacts on the environment, to discuss alternatives, and to propose mitigation measures for identified potentially significant impacts that will minimize, offset, or otherwise reduce or avoid those environmental impacts.’ DEIR, at 1-1 (emphasis added). While the DEIR discusses four alternatives to the proposed project, including (1) the No Project/No Development Alternative, (2) the Confined Aquatic Disposal Site, (3) the Convair Lagoon CDF, and (4) CDF with Beneficial Use of Sediments, a disproportionate share of the DEIR was devoted to the Convair Lagoon CDF-including over 200 pages and six appendices drafted by the San Diego Unified Port District’s (‘Port District’) consultant. DEIR, at 5-9 (setting forth the four project alternatives); 5-32- 5-271 (discussing the Convair Lagoon CDF). By contrast, the other alternatives set forth in the DEIR each received only between 2 and 6 12 pages of analysis. Moreover, no other party interested in the Shipyard Sediment Remediation Project, or the Convair Lagoon remediation was permitted to make a similar contribution. To avoid the appearance of bias, the San Diego Regional Water Quality Control Board (‘Regional Board’) staff should explain to the public why it included more than 200 pages of analysis (plus appendices) for one alternative prepared by the Port District’s consultants, while the other alternatives received a much less detailed analysis. Although the Convair Lagoon CDF was not ultimately selected as the environmentally superior alternative, General Dynamics is concerned that the extensive discussion and special treatment of this alternative compared to the other alternatives may lead to confusion as to the preferred course of action, and as discussed below, General Dynamics does not view the Convair Lagoon CDF as a viable long-term solution for the remediation of the Shipyard Sediment Site or Convair Lagoon.”

The Unified Port of San Diego (Port) is the public agency with land use authority in the San Diego Bay tidelands, including the potential Staging Areas for the proposed project and the Convair Lagoon. Responsible agencies under CEQA are agencies, other than the lead agency, that have some discretionary authority for carrying out or approving a project. (The shipyards are private entities, not public agencies, and therefore do not enjoy the same status as the Port under CEQA.) The lead agency must convene a meeting with Responsible Agency representatives to discuss the scope and content of the environmental information to be included in the EIR if requested to do so by the responsible agency (Public Resources Code section 21080.4(b)).

As a responsible agency for the proposed project and project alternatives, the Port requested consultation with the San Diego Water Board. As a result of appropriate inter-agency discussion pertaining to the CEQA Alternatives to the proposed project, a decision was made to include the Convair Lagoon CDF Alternative in the Draft PEIR.

An EIR must contain sufficient information about each alternative to permit an evaluation of the relative merits of the alternatives and the project (CEQA Guidelines section 15126.6(a)). The significant adverse environmental effects of each alternative must be discussed, but in less detail than is required for the project's effects (CEQA Guidelines section 15126.6(d)). The Draft PEIR provides a reasonable range of project alternatives and potential staging areas and does not select a preferred alternative or staging area. The inclusion of more detailed information about the Convair Lagoon CDF Alternative is intended to illuminate the potential effects of such an alternative and in no way reflects a preferred course of action. As noted in the comment, the Convair Lagoon Alternative was not identified as an Environmentally Superior Alternative to the proposed project and would require mitigation measures in addition to those required for the proposed project in multiple areas, most significantly including water quality and biological resources.

O-4-4

The letter states that: "In addition to the disproportionate consideration afforded to the Convair Lagoon CDF, General Dynamics is also concerned that much of the information contained in the Convair Lagoon CDF analysis does not relate to the Shipyard Sediment Remediation Project and should not have been included. For example, the DEIR's Appendix K, which purports to be an "Architectural Resources Evaluation" of the pier and seaplane ramp that would be demolished if the Convair Lagoon CDF were adopted, contains descriptions of a number of buildings previously located at General Dynamics' former Lindbergh Field Facility that were demolished over a decade ago. These documents are wholly irrelevant to the Shipyard Sediment Site, and there is no legitimate purpose for including them in the DEIR as part of an evaluation of architectural resources, especially when they no longer exist.[1] Likewise, the DEIR also discusses a closed leaking underground storage tank case at the former General Dynamics facility, with no explanation of how this tank relates to the Shipyard Sediment Remediation Project, or any of the alternatives under consideration. DEIR, at 5-191. While this type of information might be appropriate with

[1] Comment O-4-4 Footnote states: While it is true that the issue of source control is relevant to any alternative, including the Convair Lagoon CDF, the cleanup and abatement order for the former Teledyne Ryan site already requires source control to be achieved before further cleanup of Convair Lagoon is implemented (DEIR, at 5-35 (citing R9-2004-0258)); accordingly, the DEIR may simply note that the CDF alternative could not be adopted until source control is achieved in accordance with R9-2004-0258. Any further detail concerning potential upland sources at Convair Lagoon is not required, and is inappropriate given that the DEIR is supposed to analyze the Shipyard Sediment Remediation Project, not Convair Lagoon. This is particularly true considering that interested parties with respect to the Convair Lagoon cleanup were not afforded the opportunity to assist in the development of the DEIR, as was the Port District.

regard to an EIR for Convair Lagoon, it is plainly irrelevant to the Shipyard Sediment Remediation Project. Thus, the Cleanup Team should make clear that independent CEQA review will be required for the Convair Lagoon CDF, if selected, and strike the references to the closed underground storage tank and the demolished buildings that were previously located at the former General Dynamics' Lindbergh Field Facility."

Please see response to comment O-4-2 regarding Appendix K of the Draft PEIR.

The Cortese list, formally known as the Hazardous Waste and/or Substance Site List, is maintained by the Office of Hazardous Materials Data Management (or Office of Environmental Information within the California Environmental Protection Agency (CAL-EPA). It is based on reports provided by the Toxic Substances Control Department, the State Water Resources Control Board, CalRecycle (formerly known as the California Integrated Waste Management and Recycling Board), and local solid waste enforcement agencies. Under Public Resources Code section 21092.6, Cortese list information must be included in a Draft EIR if the project is located on a listed site. In total, five sites, including the Convair Lagoon and four adjacent properties, were identified in the records search for the Convair Lagoon Alternative as having existing or past hazardous materials contamination. These sites are appropriately identified in Chapter 5.0 of the Draft PEIR and in the revised Chapter 5.0 included in Appendix A of this RTC document.

The inclusion of detailed information about the Convair Lagoon CDF Alternative in the Draft PEIR is intended to illuminate the potential effects of such an alternative and to inform the decision-makers. The Convair Lagoon is not the proposed project, nor has it been identified as the preferred course of action. The Convair Lagoon Alternative was not identified as an Environmentally Superior Alternative to the proposed project and would require mitigation measures in addition to those required for the proposed project in multiple areas, most significantly including water quality and biological resources.

O-4-5

The letter states that: "II. SPENDING MILLIONS OF DOLLARS TO DREDGE CONTAMINATED SEDIMENT, ONLY TO DISPOSE OF IT ELSEWHERE IN THE BAY, IS NOT A VIABLE REMEDY FOR THE SHIPYARD SEDIMENT SITE

"Notwithstanding General Dynamics' above-listed concerns regarding the preparation of the DEIR, it would be patently unreasonable for dischargers to spend millions of dollars to dredge over 140,000 cubic yards of contaminated sediment, only to dispose of it in a CDF elsewhere in the Bay-particularly when consideration of the specific design details of the CDF have been deferred."

The comment expresses an opinion opposing the Convair Lagoon Alternative, and is not a comment on the environmental analysis contained in the Draft PEIR. This comment will be included as part of the record and made available to the decision-makers prior to a final decision on the project. The Convair Lagoon is not the proposed project, nor has it been identified as the preferred course of action. The Convair Lagoon Alternative was not identified as an Environmentally Superior Alternative to the proposed project and would require mitigation measures in addition to those required for the proposed project in multiple areas.

O-4-6

The letter states that: "As drafted, the DEIR contemplates that existing sediment at Convair Lagoon would be dredged and contained in a CDF, along with spoils from the Shipyard Sediment Site, and that BMPs and long-term monitoring measures would be implemented to protect water quality.

"DEIR, at 5-17- 5-19; DEIR, at Table 5-1. However, even if the proposed BMPs and monitoring measures are implemented as discussed in the DEIR, there is no guarantee that the CDF will be successful, or that sediments contained in the CDF will never be released. In fact, Convair Lagoon is already a prime example of the dangers associated with confined disposal: After significant funds were expended constructing a cap to remediate PCBs, and cleaning storm drain lines that discharge to the lagoon, PCBs were subsequently found on top of the cap. While the Cleanup Team has suggested that the contamination, 'presumably c[ame] from the 60-inch storm drain' (which drains sources upland from Convair Lagoon), the cause of the contamination has not been established, and it remains possible that the contamination resulted from a breach of the cap. DEIR, at 5-35 ('Subsequent to installation of the sand cap over the PCB contaminated sediments in Convair Lagoon, monitoring has been conducted that has discovered PCB contamination above the cap, presumably coming from the 60-inch storm drain.') (emphasis added).

Monitoring of the Convair Lagoon cap has shown that upland sources are the most likely source of the PCBs detected on top of the cap, not PCBs contained under the cap. Of the 34 samples collected from the bottom of sediment cores of the cap, only two samples contained a detectable concentration of PCBs (0.065 mg/kg in sample 3.5-120-1.5B and 0.06 mg/kg in sample 3-80-1.0B). Based on these findings, there is no evidence that the cap has been breached.

Upland source control of Convair Lagoon, among other issues, may impact the implementation schedule for achieving cleanup and abatement of the Shipyard Sediment Site. For the Convair Lagoon CDF to be a viable alternative, upland sources must be controlled to the point that beneficial uses of San Diego Bay are not threatened by upland discharges, and the TCAO implementation schedule can be met. Upland source control is ongoing and, at this time, the San Diego Water Board Cleanup Team expects it could be accomplished in time as to not adversely affect the TCAO implementation schedule. While it is not expected that upland source control would present a major obstacle to timely implementation of the TCAO, the Convair Lagoon CDF Alternative for sediment disposal represents substantial regulatory obstacles with respect to permitting. Even assuming that a CDF could be permitted at Convair Lagoon, it is unlikely that it could be permitted in time to meet the contemplated TCAO implementation schedule.

As explained in response to comment O-4-3, the Unified Port of San Diego (Port) is the public agency with land use authority in the Port District, including the potential Staging Areas for the proposed project and the Convair Lagoon. The Port is a responsible agency identified in Chapter 3.0 of the Draft PEIR. The shipyards are private entities, not public agencies, and therefore do not enjoy the same status as the Port under CEQA.

O-4-7

The comment states that: **"**The Regional Board should not risk a similar outcome with respect to a CDF at Convair Lagoon. If the proposed CDF were to be adopted and fail, causing impacts to the environment, the commingling of sediments in the CDF would likely result in complex, multi-party litigation-at great cost to all parties involved.[1] Since the Port District would be the sole beneficiary of such an alternative, due to its acquisition of the 10 additional acres of land that would be created by constructing the CDF, any alternative involving the commingling and confinement of sediments at Convair Lagoon should be contingent upon the Port District's agreement to fully fund such an approach, including accepting any and all future liability, obligations and costs, and indemnifying other parties for monitoring and remediation costs if the CDF fails."

Please refer to response to comment O-4-6.

O-4-8

The letter states that: "III. CONCLUSION

For the foregoing reasons, General Dynamics strongly objects to the Convair Lagoon CDF alternative, and requests that pages 20 to 90 of Appendix A to Appendix K, and all similar references to the former Lindbergh Field Facility, be stricken from the DEIR.**"**

The comment concludes the comment letter. See responses to comments O-4-1 through O-4-6. The comment does not contain any new substantive statements or questions about the Draft PEIR or the analysis therein. Therefore, no further response is necessary.

1 Comment O-4-7 Footnote states: As it stands, the Shipyard Sediment Site now involves 13 Designated Parties. To General Dynamics' knowledge, of the numerous parties involved, the Port District is the only party in favor of the Convair Lagoon CDF alternative.

APPENDIX A

ERRATA

APPENDIX A
ERRATA

INTRODUCTION

The Final Environmental Impact Report (EIR) is composed of the DEIR (Volumes I and II), and the Responses to Comments and Errata (Volume III).

This Errata document is provided to clarify, refine, and provide supplemental information for the Shipyard Sediment Remediation Project. Changes may be corrections or clarifications to the text of the original DEIR. Other changes to the EIR clarify the analysis in the EIR based upon the information and concerns raised by commenters during the public comment period. None of the information contained in this EIR Errata constitutes significant new information or changes to the analysis or conclusions of the DEIR.

PROJECT REFINEMENTS

In response to comments received on the Draft PEIR prepared for the proposed project, the following project refinements have been hereby incorporated into the proposed project:

- Sand import and rock quarry import updated from approximately 10 truck trips per day to approximately 25 to 30 import trips per day.
- The San Diego Water Board will ensure that the responsible parties identified in the TCAO notify and consult California State Lands Commission (CSLC) staff in the event that any cultural resources are uncovered.
    - A protocol will be put into place to address accidental discovery of any archeological resources and/or human remains in the project footprint. If, during the course of project construction, unanticipated cultural resources are discovered, work should be halted temporarily until a qualified archaeologist can evaluate the significance of the resources. If human remains are encountered during work on this project, State Health and Safety Code section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resource Code section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). The MLD may inspect the site of the discovery with the permission of the landowner, or his or her authorized representative. The MLD shall complete his/her inspection within 48 hours of

notification by the NAHC. The MLD may recommend scientific removal and analysis of human remains and items associated with Native American burials.

- The San Diego Water Board will ensure that the responsible parties identified in the TCAO contract specifications will include the requirement that there be no off-site truck parking.

The refinements identified above clarify or amplify project features included in the proposed Project, and do not result in a substantive change to project impacts or change the significance conclusions of the Draft PEIR.

A Revised Tentative Clean-up and Abatement Order (TCAO) was provided on September 15, 2011, consistent with the Third Amended Order of Proceedings. There are no changes to the project description in the EIR, however, as a result of the updated TCAO.

The information included in these errata resulting from the public comment process does not constitute substantial new information that requires recirculation of the DEIR. California Environmental Quality Act (CEQA) Guidelines section 15088.5 states, in part:

> (a) A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification. As used in this section, the term “information” can include changes in the project or environmental setting as well as additional data or other information. New information added to an EIR is not “significant” unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project’s proponents have declined to implement. “Significant new information” requiring recirculation include, for example, a disclosure showing that:
>
> (1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
>
> (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
>
> (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project’s proponents decline to adopt it.
>
> (4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were

precluded. (*Mountain Lion Coalition v. Fish and Game Com.* (1989) 214 Cal. App. 3d 1043)

(b) Recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR.

(c) If the revision is limited to a few chapters or portions of the EIR, the lead agency need only recirculate the chapters or portions that have been modified.

(d) Recirculation of an EIR requires notice pursuant to Section 15087, and consultation pursuant to Section 15086.

(e) A decision not to recirculate an EIR must be supported by substantial evidence in the administrative record.

(f) The lead agency shall evaluate and respond to comments as provided in Section 15088. Recirculating an EIR can result in the lead agency receiving more than one set of comments from reviewers. The following are two ways in which the lead agency may identify the set of comments to which it will respond. This dual approach avoids confusion over whether the lead agency must respond to comments which are duplicates or which are no longer pertinent due to revisions to the EIR. In no case shall the lead agency fail to respond to pertinent comments on significant environmental issues.

(1) When an EIR is substantially revised and the entire document is recirculated, the lead agency may require reviewers to submit new comments and**,** in such cases, need not respond to those comments received during the earlier circulation period. The lead agency shall advise reviewers, either in the text of the revised EIR or by an attachment to the revised EIR, that although part of the administrative record, the previous comments do not require a written response in the final EIR, and that new comments must be submitted for the revised EIR. The lead agency need only respond to those comments submitted in response to the recirculated revised EIR.

(2) When the EIR is revised only in part and the lead agency is recirculating only the revised chapters or portions of the EIR, the lead agency may request that reviewers limit their comments to the revised chapters or portions of the recirculated EIR. The lead agency need only respond to (i) comments received during the initial circulation period that relate to chapters or portions of the document that were not revised and recirculated, and (ii) comments received during the recirculation period that relate to the chapters or portions of the earlier EIR that were revised and recirculated. The lead agency’s request that reviewers limit the scope

of their comments shall be included either within the text of the revised EIR or by an attachment to the revised EIR.

(3) As part of providing notice of recirculation as required by Public Resources Code Section 21092.1, the lead agency shall send a notice of recirculation to every agency, person, or organization that commented on the prior EIR. The notice shall indicate, at a minimum, whether new comments may be submitted only on the recirculated portions of the EIR or on the entire EIR in order to be considered by the agency.

(g) When recirculating a revised EIR, either in whole or in part, the lead agency shall, in the revised EIR or by an attachment to the revised EIR, summarize the revisions made to the previously circulated draft EIR.

The changes to the DEIR included in these Errata do not constitute "significant" new information because:

- No new significant environmental impact has been identified and no new mitigation measure or project revisions must be added in order to reduce it to a less than significant level;
- Project revisions and mitigation measure revisions that have been added in response to written or verbal comments pertain to project impacts previously identified in the Draft EIR; and
- Project revisions and mitigation measure revisions added after circulation of the EIR do not create new significant environmental effects.

Therefore, recirculation of the DEIR is not required because the new information added to the EIR through this Errata document clarifies or amplifies or makes insignificant modifications to the already adequate DEIR.

Changes in text are signified by strikeouts (~~strikeouts~~) where text has been removed and by underlining (<u>underline</u>) where text has been added. The applicable page numbers from the DEIR are also provided where necessary for easy reference.

The Errata document consists primarily of changes to text within specific mitigation measures. Changes to mitigation measures would apply to Chapter 1.0 Executive Summary; the applicable subchapter in Chapter 4.0 Existing Environmental Setting, Environmental Analysis, Impacts, and Mitigation Measures; Chapter 7.0 Mitigation Monitoring and Reporting Program; and where applicable, Chapter 5.0, Convair Lagoon Alternative. For simplicity, these changes are identified below under the Chapter 4.0 Existing Environmental Setting, Environmental Analysis, Impacts, and Mitigation Measures heading and would be implemented throughout the document where applicable.

CHAPTER 4.0: EXISTING ENVIRONMENTAL SETTING, ENVIRONMENTAL ANALYSIS, IMPACTS, AND MITIGATION MEASURES, SECTION 4.1

This change was made in response to Caltrans' comment A-1-2 requesting clarification regarding Mitigation Measure 4.1.1.

Mitigation Measure 4.1.1: Should one or more of Staging Areas 1 through 4 be selected, the contractor shall require, and the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall verify, that the project-related truck traffic is routed on Harbor Drive (southbound) to the Civic Center Drive access to Interstate 5 (I-5) for the duration of the dredge-and-haul <u>and sand import</u> activity. <u>This requirement will be reflected in the contract documents for the primary contractor and sub-contractors.</u> Haul, delivery, and employee traffic shall be discouraged at the I-5 southbound ramp/Boston Avenue intersection and on the roadway segment of Boston Avenue between 28th Street and the I-5 southbound ramp.

The additional text included within Mitigation Measure 4.1.1 clarifies how this mitigation measure would be implemented. No significant new information constituting a new significant environmental impact has been identified.

CHAPTER 4.0: EXISTING ENVIRONMENTAL SETTING, ENVIRONMENTAL ANALYSIS, IMPACTS, AND MITIGATION MEASURES, SECTION 4.2

This change was made in response to NASSCO comment 0-3-93 requesting correction to a typographical error in Mitigation Measure 4.2.2.

Mitigation Measure 4.2.2: During dredging operations, the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) shall verify that the dredge contractor is implementing standard Best Management Practices (BMPs) for minimizing resuspension, spillage, and misplaced sediment during dredging operations, as the deposition of such material would increase turbidity and compromise cleanup efforts. Such BMPs shall include, but not be limited to, the following:

- The contractor shall not stockpile material on the bottom of the San Diego Bay floor and shall not sweep or level the bottom surface with the bucket.
- The contractor shall use and maintain double silt curtains that encircle the area of dredging and shall minimize the times in which these curtains are temporarily opened, to contain suspended sediments.
- The contractor ~~shall~~ may use air curtains in conjunction with silt curtains to contain re-suspended sediment, to enhance worker safety, and allow barges to transit into and out of the work area without the need to open and close silt curtain gates.
- The contractor shall ensure the environmental clamshell bucket is entirely closed when withdrawn from the water and moved to the barge. This action requires extra attention when debris is present to make sure debris does not prevent the bucket from completely closing. Two closure switches shall be on each side of the bucket near the top and bottom to provide an electrical signal to the operator that the bucket is closed. Use of the switches shall minimize the potential of sediment leaking from the bucket into the water column during travel to the surface.
- The contractor shall not overfill the digging bucket because overfill results in material overflowing back into the water. Use of instrumentation such as Clam Vision® shall allow

the operator to visualize in real time the depth of cut that shall be designed to prevent overfilling.

- The contractor shall utilize wide-pocket material barges having watertight containments to prevent return water from re-entering San Diego Bay. The contractor shall not overfill the material barge to a point where overflow or spillage could occur. Each material barge shall be marked in such a way to allow the operator to visually identify the maximum load point. The marking should allow sufficient interior freeboard to prevent spillage in rough water such as ship wakes during transit. Initiating the material barge marking shall minimize impact of load spillage during transit to the unloading area.
- The contractor shall not use weirs as a means to dewater the scow and shall allow additional room for sediment placement. Preventing this action shall minimize the introduction of turbidity to the water column.
- The contractor shall place material in the material barge such that splashing or sloshing does not occur, which could send sediment back into the water. Splashing can be controlled by restricting the drop height from the bucket.
- If the use of a grate to collect debris is required, the contractor shall not allow material to pile up on the grid and flow or slip from the grid back into the water. The debris scalper shall be positioned in such a way as to be totally contained on the shore side of the unloading operations. The dredge operator shall visually monitor for debris build-up and alert the support personnel on the barge to assist in clearing the debris, as necessary. Debris that is derived from dredging activities shall be removed from the grate by the environmental clamshell bucket and placed in a contained area on the dredge barge or in a second material barge for subsequent removal to the onshore dewatering facility.
- The contractor shall restrict barge movement and work boat speeds (i.e., reducing propeller wash) in the dredge area. The remedial design should identify the various areas where this operational control should be used.

This measure is correct in Section 4.2 but was incorrect in Chapter 7.0. The change is a correction to a typographical error. No significant new information constituting a new significant environmental impact has been identified.

CHAPTER 4.0: EXISTING ENVIRONMENTAL SETTING, ENVIRONMENTAL ANALYSIS, IMPACTS, AND MITIGATION MEASURES, SECTION 4.3

This change was made in response to DTSC Comment A-4-4 requesting additional coordination with the Department of the Navy in recovering munitions and ordnance within the San Diego Bay.

Mitigation Measure 4.3.2: **Dredging Management Plan.** The contractor shall ensure that a Dredging Management Plan (DMP) containing Standard Operating Procedures (SOPs) for the project is developed prior to the initiation of dredging and implemented for the duration of the dredging activity. The DMP will include the following measures to prevent release of hazardous materials during construction activities:

- Personnel involved with dredging and handling the dredged material will be given training on their specific task areas, including:
    - Potential hazards resulting from accidental oil and/or fuel spills;
    - Proper dredging equipment operation; ~~and~~
    - Proper silt curtain deployment techniques;<u> and</u>
    - <u>Proper response in the event that ordnance or munitions are encountered.</u>
- All equipment will be inspected by the dredge contractor and equipment operators before starting the shift. These inspections are intended to identify typical wear or faulty parts.
- Required instrumentation to avoid spillage of dredging material will be identified for each piece of equipment used during dredging operations.
- Personnel will be required to visually monitor for oil or fuel spills during construction activities.
- In the event that a sheen or spill is observed, the equipment will be immediately shut down and the source of the spill identified and contained. Additionally, the spill will be reported to the applicable agencies presented in the DMP.
- All personnel associated with dredging activities will be trained as to where oil/fuel spill kits are located, how to

deploy the oil-absorbent pads, and proper disposal guidelines. The dredging barge shall have a full complement of oil/fuel spill kits on board to allow for quick and timely implementation of spill containment.

- The use of oil booms will be deployed surrounding the dredging activities. In the event that a spill occurs, the oil and/or fuel will be contained within the oil boom boundary. The silt curtains may also act as an oil boom, provided absorbent material is deployed during a spill.
- Shallow areas along the haul route will be mapped and provided to the dredge operator for review. These areas will be avoided to the extent possible to prevent propeller wash resuspension of sediment.
- Load-controlled barge movement, line attachment, and horsepower requirements of tugs and support boats at the project site will be specified to avoid resuspension of sediment.
- Barge load limits and loading procedures will be identified, and the appropriate draft level will be marked on the materials barge hull.
- A protocol will be developed for the project in conjunction with the U.S. Department of the Navy (DON) to address any munitions and ordnance that have been found during the project. As required for projects within the San Diego Bay Ship Channels, the project shall be coordinated with the Navy NAVFAC Southwest Division in San Diego for munitions clearance.

Implementation of the DMP will be verified by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board). The DON will be provided an opportunity to review and comment on the DMP, particularly with respect to ordnance and munitions that have been identified in proximity to the Shipyard Sediment Site.

The additional text included within Mitigation Measure 4.3.2 clarifies how this mitigation measure would be implemented. No significant new information constituting a new significant environmental impact has been identified.

CHAPTER 4.0: EXISTING ENVIRONMENTAL SETTING, ENVIRONMENTAL ANALYSIS, IMPACTS, AND MITIGATION MEASURES, SECTION 4.3

DTSC Comment A-4-4 requested additional coordination with the Department of the Navy in recovering munitions and ordnance within the San Diego Bay.

Mitigation Measure 4.3.3: **Contingency Plan.** The contractor shall ensure that a Contingency Plan has been developed prior to the initiation of dredging and implemented for the duration of the dredging activity to address equipment and operational failures that could occur during dredging operations. <u>The Contingency Plan will also address the potential to encounter munitions or ordnance.</u> The Contingency Plan will include the following measures to prevent release of hazardous materials during construction activities:

- Actions to implement in the event of equipment failure, repair, or silt curtain breach. These include:
  - Communication to project personnel;
  - Proper signage and/or barriers alerting others of potentially unsafe conditions;
  - Specification for repair work to be conducted on land and not over water;
  - Identification of proper spill containment equipment (e.g., spill kit);
  - A plan identifying availability of other equipment or subcontracting options;
  - Emergency procedures to follow in the event of a silt curtain breach;
  - Incident reporting and review procedure to evaluate the causes of an accidental silt curtain breach and steps to avoid further breaches; and
  - Response procedures in the event of barge overfill.
- <u>Actions to implement in the event that munitions or ordnance are encountered during project activities. These include:</u>
  - <u>Immediate stoppage of all in-water work activities until further notice to proceed is received;</u>

- Contact the Site Safety Manager;
- Refer to the Contingency Plan section that presents the emergency contact name(s) and telephone number(s) for NAVFAC Southwest Division; and
- Contact NAVFAC Southwest Division personnel. The recovery and disposal of any munitions and/or ordnance item(s) found will become the responsibility of NAVFAC Southwest Division.

Implementation of the Contingency Plan will be verified by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board).

The additional text included within Mitigation Measure 4.3.3 clarifies how this mitigation measure would be implemented. No significant new information constituting a new significant environmental impact has been identified.

CHAPTER 4.0: EXISTING ENVIRONMENTAL SETTING, ENVIRONMENTAL ANALYSIS, IMPACTS, AND MITIGATION MEASURES, SECTION 4.3

This change was made in response to DTSC Comment A-4-4 requesting additional coordination with the Department of the Navy in recovering munitions and ordnance within the San Diego Bay.

Mitigation Measure 4.3.4: **Health and Safety Plan.** The contractor shall ensure that a Health and Safety Plan (H&S Plan) has been developed prior to the initiation of dredging and implemented for the duration of the dredging activity to protect workers from exposure to contaminated sediment. The H&S Plan will include the following requirements at a minimum:

- Training for operators to prevent spillage of sediment on the bridges during dredging activities
- Training for operators in decontamination and waste containment procedures
- <u>Training for operators in appropriate notification/handling procedures for munitions/ordnance</u>
- Identification of appropriate Personal Protection Equipment (PPE) for all activities, including sediment removal, management, and disposal
- Certification of personnel under safety regulations such as Occupational Safety and Health Administration (OSHA) 29 Code of Federal Regulations (CFR) 1910.120
- Documentation that requires that health and safety procedures have been implemented

Implementation of the H&S Plan will be verified by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board).

The additional text included within Mitigation Measure 4.3.4 clarifies how this mitigation measure would be implemented. No significant new information constituting a new significant environmental impact has been identified.

CHAPTER 4.0: EXISTING ENVIRONMENTAL SETTING, ENVIRONMENTAL ANALYSIS, IMPACTS, AND MITIGATION MEASURES, SECTION 4.5

This change was made in response to California State Lands Commission Comment A-5-9 requesting additional clarification and additional detail specifying actions that would reduce potential impacts to sensitive biological resources potentially located at Staging Area 5

Mitigation Measure 4.5.11: If Staging Area 5 is selected, the California Department of Fish and Game (CDFG) shall be notified not less than 30 days in advance and shall be given the opportunity to provide recommended measures to minimize impacts from increased noise and human activity to species in the Sweetwater Marsh Unit of the San Diego Bay National Wildlife Refuge (NWR). All agency-recommended measures (or agency-approved substitute measures, if recommended measures are infeasible) shall be implemented throughout the duration of project activities in Staging Area 5. At a minimum, the applicant shall conduct pre-activity nesting bird surveys within 300 feet of all noise-intensive activities if such activities will be initiated within the breeding season for special-status species (conservatively February 1 through August 31). If nesting birds are identified within 300 feet of activities, a qualified (and, if appropriate based on the species, agency-permitted) biological monitor shall be present on site to observe the behavior of the nesting birds during initiation of activities. The biological monitor shall have the authority to temporarily halt or redirect activities in the event that adverse effects to the birds are evident (e.g., there is a risk of nest failure or other indication of harassment, as defined by the Endangered Species Act). If adverse effects to nesting birds appear to be likely, the monitor shall recommend additional measures (e.g., installation of sound barriers, limiting duration of activities, relocating activities to another area, or postponing activities until the nest is no longer active) in concert with resource agency personnel.

Regardless of whether nesting birds are identified during pre-activity nesting bird surveys, t~~T~~he biological monitor shall inspect the site and any adjacent areas supporting potential nesting habitat at least every 2 weeks during project activities that are conducted during the nesting season (conservatively February 1 through August 31) and shall report monthly to the State Water Resources Control Board (State Water Board).

The additional text included within Mitigation Measure 4.5.11 clarifies how this mitigation measure would be implemented. No significant new information constituting a new significant environmental impact has been identified.

CHAPTER 4.0: EXISTING ENVIRONMENTAL SETTING, ENVIRONMENTAL ANALYSIS, IMPACTS, AND MITIGATION MEASURES, SECTION 4.6

This change was made in response to Unified Port of San Diego comment A-2-47 pertaining to the sand import phase of the project. The following Air Quality Tables were updated to reflect the correct number of sand import trips, and to correct typographical errors:

Table 4.6-3: Construction Emissions by Phase (lb/day)

Task	CO	ROCs	NO_X	SO_X	PM_{10}	$PM_{2.5}$	CO_2
Debris and Pile Removal	53.8	8.2	148.4	5.2	5.4	4.7	10,846.8
Dredging of Project Site	70.0	14.6	**340.7**	8.6	11.3	10.3	15,171.9
Landside Staging Area, Pad Construction	83.2	14.3	163.8	20.3	8.7	7.6	14,045.8
Landside Staging Area, Operations	168.6	22.4	**333.8**	7.7	12.6	11.0	36,201.1
Covering of Sediment Near Structures	~~30.9~~ 42.8	~~5.5~~ 7.1	~~105.2~~ 128.8	3.9	~~3.9~~ 4.7	~~3.5~~ 4.3	~~5,747.9~~ 8,393.6
San Diego Emissions Thresholds	**550**	**137**	**250**	**250**	**100**	**N/A**	**N/A**
Exceed Significance Threshold?	NO	NO	**YES**	NO	NO	N/A	N/A

Source: LSA Associates, Inc., March 2011.

Table 4.6-4: Peak Daily Construction Emissions (lbs/day)

Activity	CO	ROCs	NO_X	SO_X	PM_{10}	$PM_{2.5}$	CO_2
Pad Construction	83.2	14.3	163.8	20.3	8.7	7.6	14,045.8
Dredging/Landside Operations	~~323.3~~ 335.2	~~50.7~~ 52.3	**~~928.1~~ 951.7**	25.4	~~33.2~~ 34.0	~~29.5~~ 30.3	~~67,967.7~~ 70,613.4
San Diego Emissions Threshold	**550**	**137**	**250**	**250**	**100**	**NA[1]**	**NA**
Exceed Significance Threshold?	NO	NO	**YES**	NO	NO	NO	NA

Source: LSA Associates, Inc., March 2011.
[1] No threshold has been established.
Note: Bold face numbers indicate emissions exceeding San Diego City emissions threshold.
CO = carbon monoxide
CO_2 = carbon dioxide
NO_X = nitrogen oxides
SO_X = sulfur oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
ROCs = reactive organic compounds
PM_{10} = particulate matter less than 10 microns in size

The clarification does not change the significance conclusions of the Draft PEIR. No significant new information constituting a new significant environmental impact has been identified.

CHAPTER 4.0: EXISTING ENVIRONMENTAL SETTING, ENVIRONMENTAL ANALYSIS, IMPACTS, AND MITIGATION MEASURES, SECTION 4.6

This change was made in response to Unified Port of San Diego comment A-2-31 pertaining to $PM_{2.5}$ thresholds.

As identified in Tables 4.6-3 and 4.6-4 (see previous Response to Comment A-2-47), emissions of particulate matter (PM_{10} and $PM_{2.5}$) generated during dredging and dewatering activities will be relatively small. PM_{10} emissions are well below the daily threshold ~~and will not exceed the thresholds~~ of significance for particulate matter. Therefore, construction activities associated with the project would result in less than significant adverse impacts related to PM_{10} and $PM_{2.5}$ and therefore fugitive dust as well.

This change is a clarification to reflect the fact that there are no locally adopted thresholds for $PM_{2.5}$. No significant new information constituting a new significant environmental impact has been identified.

CHAPTER 4.0: EXISTING ENVIRONMENTAL SETTING, ENVIRONMENTAL ANALYSIS, IMPACTS, AND MITIGATION MEASURES, SECTION 4.6

This change was made in response to San Diego Coastkeeper/Environmental Health Coalition comment O-2-11 requesting clarification of Mitigation Measure 4.6.10.

Mitigation Measure 4.6.10: The contractor shall be required by contract specifications to ensure that alternative fuel construction equipment (i.e., compressed natural gas, liquid petroleum gas, and unleaded gasoline) are utilized to the extent 1) that the equipment is readily available and 2), if such equipment is available ~~cost effective~~ in the San Diego Air Basin (SDAB), it is also cost effective. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) prior to the initiation of dredging. The San Diego Water Board shall verify implementation of this measure.

The additional text included within Mitigation Measure 4.6.10 clarifies how this mitigation measure would be implemented. No significant new information constituting a new significant environmental impact has been identified.

CHAPTER 4.0: EXISTING ENVIRONMENTAL SETTING, ENVIRONMENTAL ANALYSIS, IMPACTS, AND MITIGATION MEASURES, SECTION 4.6

This change was made in response to NASSCO comment 0-3-100 requesting clarification of the implementation of Mitigation Measure 4.6.15 as it relates to potential odor impacts.

Mitigation Measure 4.6.15: To accelerate the decomposition process and reduce odor impacts, the contractor shall apply a mixture of Simple Green and water (a ratio of 10:1) to the dredged material to the extent odor issues arise with respect to particular portions of the dredged material. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) prior to the initiation of dredging. The San Diego Water Board shall verify implementation of this measure.

The additional text included within Mitigation Measure 4.6.15 clarifies how this mitigation measure would be implemented. No significant new information constituting a new significant environmental impact has been identified.

CHAPTER 5.0: ALTERNATIVES

The revision to Mitigation Measure 4.5.11 also applies to mitigation included in Chapter 5.0 Alternatives. This change was made in response to NASSCO comment 0-3-128 requesting clarification of biological resource survey time frames.

Mitigation Measure 5.10.4.3: **Eelgrass and Local Policy Conflicts.** For direct and indirect eelgrass impacts at Convair Lagoon, and in accordance with the current Southern California Eelgrass Mitigation Policy SCEMP), approximately 7.22 acres of eelgrass shall be replaced by the construction contractor and a qualified biologist through a transplant method to achieve a 1.2:1 replacement ratio for the loss of 6.01 acres of existing eelgrass, through the following methods. Prior to implementation of these methods, a pre-construction mapping survey must be completed during the active growth phase for the vegetation (typically March through October) and shall be valid for a period of 60 days with the exception of surveys completed in August–October. Surveys completed after unusual climatic events (i.e., high rainfall) may have modified requirements and surveyors should contact NMFS, CDFG, and USFWS to determine if any modifications to the standard survey procedures will be required. A survey completed in August–October shall be valid until the resumption of active growth (i.e., in most instances, March 1) in accordance with the Southern California Eelgrass Mitigation Policy (SCEMP) (National Marine Fisheries Service [NMFS], 1991 as amended) to document the amount of eelgrass that will likely be affected by dredging activity. A post-construction survey shall be conducted by a qualified biologist, retained by the construction contractor, within 30 days of project commencement and completion. These surveys shall be used to determine specific mitigation:

a) A Final eelgrass mitigation plan shall be prepared and approved by the ACOE, acting in conjunction with the resource agencies, including the San Diego Water Board, NMFS, USFWS, EPA and the CDFG. The results of the pre-construction survey shall be integrated into a Final Eelgrass Mitigation Plan for the project and used to calculate the amount of eelgrass to be mitigated. The plan shall include details and descriptions regarding the chosen mitigation site, transplant methods, program schedule, 5-year monitoring program, success criteria, and actions to undertake for failed mitigation goals, consistent with the SCEMP. Transplantation of eelgrass shall occur only with the written approval of the CDFG.

b) Mitigation methods for eelgrass shall include creating eelgrass habitat at one or more locations within the San Diego Bay by raising the bay floor elevation to approximately -5 ft MLLW with dredged materials and planting eelgrass on the elevated plateau. Replacement mitigation for eelgrass may occur in one or more of the following locations, as approved by the resource agencies NMFS, USFWS, EPA, CDFG and ACOE: 1) Naval Training Center (NTC) channel; 2) Harbor Island – West Basin; 3) Adjacent to Convair Lagoon; 4) A-8 Anchorage; 4) South Bay Borrow Site; 5) South Bay Power Plant Channel; 6) South Bay Power Plant; and 7) Emory Cove Channel. Brief descriptions of these potential mitigation sites are described in Table 5-25 below.

~~c)~~ The post-construction eelgrass survey shall be submitted to the NMFS, USFWS, CDFG, and the Executive Director of the California Coastal Commission, as well as the San Diego Water Board. ~~An eelgrass mitigation plan shall be prepared and approved by the ACOE, acting in conjunction with the resource agencies, including NMFS, USFWS, EPA, and the CDFG. The plan shall include details and descriptions regarding the chosen mitigation site, transplant methods, program schedule, 5-year monitoring program, success criteria, and actions to undertake for failed mitigation goals, consistent with the Southern California Eelgrass Mitigation Policy. Transplantation of eelgrass shall occur only with the written approval of the CDFG.~~

d) Criteria for determination of transplant success at the selected mitigation site shall be based upon a comparison of vegetation coverage (area) and density (turions[1] per square meter) between the adjusted impact

[1] A turion is a specialized overwintering bud produced by aquatic herbs.

area (original impact area multiplied by 1.2 or the amount of eelgrass habitat to be successfully mitigated at the end of 5 years) and the mitigation site(s). The extent of vegetated cover is defined as that area where eelgrass is present and where gaps in coverage are less than 1 meter between individual turion clusters. Density of shoots is defined by the number of turions per area present in representative samples within the original impact area, control or transplant bed. Specific criteria are as follows:

- The mitigation site shall achieve a minimum of 70 percent area of eelgrass and 30 percent density as compared to the adjusted project impact area after the first year.
- The mitigation site shall achieve a minimum of 85 percent area of eelgrass and 70 percent density as compared to the adjusted project impact area after the second year.
- The mitigation site shall achieve a sustained 100 percent area of eelgrass bed and at least 85 percent density as compared to the adjusted project impact area for the third, fourth, and fifth years.
- The final determined amount of eelgrass to be transplanted shall be based upon the guidelines in the SCEMP. If remedial transplants at the project site are unsuccessful, then eelgrass mitigation shall be pursued at the secondary eelgrass transplant location.
- The San Diego Water Board shall verify implementation of this mitigation measure.

The typographical error regarding eelgrass surveys has been corrected. The SCEMP requires post-construction surveys within 30 days of project completion. Pre-construction surveys are required to be conducted between March and October and are generally valid for 60 days, except that surveys conducted August through October are valid until the following March. No significant new information constituting a new significant environmental impact has been identified.

REVISED CHAPTER 5.0

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5.0 ALTERNATIVES

5.1 INTRODUCTION

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) describe a reasonable range of alternatives to the proposed project or to its location that could feasibly attain most of the basic project objectives but avoid or substantially lessen any of the significant effects, and that it evaluate the comparative merits of each of the alternatives. This section sets forth the potential alternatives to the proposed project and evaluates them as required by CEQA and the CEQA Guidelines.

Key provisions in the CEQA Guidelines regarding alternatives (section 15126.6) are summarized below to explain the foundation of the alternatives analysis in an EIR:

- The EIR will describe and analyze a range of reasonable alternatives to the project or the project's location that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant impacts of the project. The EIR will also evaluate the comparative merits of the alternatives.
- The No Project/No Development Alternative shall be evaluated along with its impact. The No Project/Development Alternative analysis shall discuss the existing conditions as well as what could be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.
- The range of alternatives required in an EIR is governed by the "rule of reason," which requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project.
- Factors that may be taken into account when addressing the feasibility of alternatives are site suitability; economic viability; availability of infrastructure; General Plan consistency; other plans or regulatory limitations; jurisdictional boundaries; and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site(s).
- Only alternative locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR.
- An EIR need not consider an alternative under which the effect cannot be reasonably ascertained and implementation is remote and speculative.

In identifying alternatives for this Program EIR, alternatives were selected by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) that comply with CEQA requirements, would be reasonable and feasible for the project site, are in consideration of the existing uses of the project area, and are based upon comments received on the Notice of Preparation (NOP) and/or at the public scoping meeting for this Program Environmental Impact Report (PEIR).

In addition to the alternatives selected for evaluation, several possible alternatives were considered but not studied further because they failed to meet the project objectives and/or were not deemed feasible. These considered, but rejected, alternatives are described in Section 5.4.1

5.2 PROJECT OBJECTIVES

As stated in Section 3.0, Project Description, the objectives set forth below have been established for the Shipyard Sediment Remediation Project and will aid decision-makers in their review of the project and associated environmental impacts. The primary goal of the project is to improve water quality in San Diego Bay, consistent with the provisions of the Tentative Cleanup and Abatement Order (CAO). The specific project objectives are:

- Protect the quality of the waters of San Diego Bay for use and enjoyment by the people of the state by executing a shipyard sediment cleanup project consistent with the provisions of Tentative CAO No. R9-2011-0001;
- Attain cleanup levels as included in the Tentative CAO No. R9-2011-0001 (judged to be technologically and economically feasible as defined in section 2550.4 of CCR Title 23, pursuant to Resolution No. 92-49);
- Remediate areas identified in Attachment 2 of Tentative CAO No. R9-2011-0001;
- Minimize adverse effects to aquatic life beneficial uses, including Estuarine Habitat (EST), Marine Habitat (MAR), and Migration of Aquatic Organisms (MIGR);
- Minimize adverse effects to aquatic-dependent wildlife beneficial uses, including Wildlife Habitat (WILD), Preservation of Biological Habitats of Special Significance (BIOL), and Rare, Threatened, or Endangered Species (RARE);
- Minimize adverse effects to human health beneficial uses, including Contact Water Recreation (REC-1), Non-contact Water Recreation (REC-2), Shellfish Harvesting (SHELL), and Commercial and Sport Fishing (COMM);
- Implement a cleanup plan that will have long-term effectiveness;
- Minimize adverse effects to the natural and built environment;
- Avoid or minimize adverse impacts to residential areas;

- Result in no long-term loss of use of shipyard and other San Diego Bay-dependent facilities; and
- Minimize short-term loss of use of shipyard and other San Diego Bay-dependent facilities.

5.3 PROPOSED PROJECT

As previously noted, alternatives must be evaluated as to their ability to reduce or eliminate significant unavoidable adverse environmental impacts associated with the proposed project, including an alternate location, and feasibly attain the basic objectives of the project. The comparative merits of the different alternatives are evaluated in accordance with CEQA.

The project addressed in this PEIR is the implementation of Tentative CAO No. R9-2011-0001, which requires that remedial actions be implemented within the Shipyard Sediment Site. Remedial actions may include dredging, application of clean sand cover, and/or natural recovery depending upon a number of factors, including levels of contamination in the sediment and site accessibility. The Tentative CAO determined that dredging and disposal of sediments is the proposed remedy for approximately 15.2 acres of the site and is expected to generate approximately 143,400 cubic yards (cy) of contaminated marine sediment. In addition to the 15.2 acres targeted for dredging, approximately 2.3 acres of the project site are inaccessible or under-pier areas that will be remediated by one or more methods other than dredging, most likely by application of clean sand cover. The remedial action would be followed by a period of post-remedial monitoring.

The project includes the dredging of and/or applying a clean sand cover to the contaminated soils; vessel transport to shore; dewatering, stockpiling, and testing of dredged materials at a landside staging location; and truck transport of dredge materials to the appropriate landfill disposal facility.

There are two scheduling options for completion of the remedial action. The first scheduling option is expected to take 2 to 2.5 years to complete. Under this option, the dredging operations would occur for 7 months of the year and would cease from April through August during the endangered California least tern breeding season.

The second option is to implement the remedial plan with continuous dredging operations, which would be expected to take approximately 12.5 months to complete. This scenario assumes that the dewatering, solidification, and stockpiling of the materials would occur simultaneously and continuously with the dredging. Also assumed under this compressed schedule option is that dredging operations could proceed year-round, including during the breeding season of the endangered California least tern (April through August). Both scheduling options would be followed by a period of post-remedial monitoring as required by the Tentative CAO. Some variation in the schedule may occur depending upon selected equipment size and numbers, the distance to the process area, the potential ship traffic, and the contractual obligations of the shipyards at the time the dredge activity is to occur.

The proposed project requires a landside sediment management site with sufficient space and access to stockpile, dewater, and transport the removed dredge material. Although the exact area required for sediment management will be determined during the final design phase, it is estimated that 2 to 2.5 acres would be required. Five potential staging areas have been identified and discussed throughout this PEIR.

Once the dredge materials have been dried and tested, they will be loaded from the staging area onto trucks for disposal at an approved landfill. For purposes of this project, it is assumed that 85 percent of the material will be transported from the staging area to Otay Landfill, approximately 15 miles southeast of the Shipyard Sediment Site. Although the sediment is not known to be classified as California hazardous material, it will be tested upon removal and prior to disposal. It is assumed for the purposes of this PEIR that up to 15 percent of the material will require transport to a hazardous waste facility (a Class I facility), which will most likely be the Kettleman Hills Landfill in Kings County, California, near Bakersfield.

Please refer to Chapter 3.0 of this PEIR for more information regarding the proposed project, including details of the proposed dredging and clean sand cover operations, onshore dewatering and treatment, and transportation and disposal operations. Specifically, Figures 3-1 through 3-7 illustrate the location of the project site and potential staging areas.

The potential impacts of the proposed project are described in Chapter 4.0, along with feasible mitigation measures to reduce significant impacts. Many of the project impacts are below established thresholds of significance or can be reduced to below thresholds of significance with the implementation of mitigation measures. Some impacts cannot be reduced to below a level of significance, even with mitigation, and are considered unavoidable adverse impacts. The unavoidable adverse impacts for the proposed project are described below.

5.3.1 Significant Unavoidable Environmental Impacts of the Proposed Project

5.3.1.1 Air Quality

The proposed Shipyard Sediment Remediation Project would result in significant unavoidable construction-related adverse air quality impacts of oxides of nitrogen (NO_X) (which is a precursor to ozone [O_3]) emissions, even after the implementation of feasible standard conditions and mitigation measures. While adherence to San Diego Air Pollution Control District (APCD) rules and regulations and identified mitigation measures would reduce this impact, it would remain significant and adverse because the City of San Diego and National City daily thresholds for NO_X would be exceeded. There are no other feasible mitigation measures that are available to offset this significant impact.

Construction activities for the Shipyard Sediment Remediation Project would also contribute to construction-related adverse cumulative air quality impacts because the San Diego Air Basin (SDAB) is presently in nonattainment for O_3, and the proposed project, in conjunction with other planned projects, would contribute to the existing nonattainment status for O_3. Therefore, the cumulative construction air quality impacts of the proposed project would remain significant.

5.3.2 Attainment of Project Objectives

The proposed project implements all of the project objectives. The proposed project includes the removal of debris and sediment and the placement of clean sand cover over sediments not suitable for dredging, thereby improving water quality in San Diego Bay, consistent with the Draft Technical Report (DTR) for the Tentative CAO. The proposed project will attain the cleanup levels judged to be technologically and economically feasible for the remedial footprint areas identified in the Tentative CAO. [1]

Removal and covering of the contaminated sediments will protect the quality of the waters of San Diego Bay for use and enjoyment by the people of the state. Further, implementation of the post-remediation monitoring as required will ensure the long-term effectiveness of the project.

Protective measures, such as the use of double silt curtains and environmental clamshell buckets, have been incorporated into the project design to ensure that the proposed project minimizes adverse effects to aquatic life beneficial uses, aquatic-dependent wildlife beneficial uses, and human health beneficial uses. Measures proposed to protect water quality during removal and covering operations have been specifically designed to minimize adverse effects to the natural and built environment.

Both scheduling options for the proposed project will reflect the contractual obligations of the shipyards at the time the dredge activity is to occur. It is anticipated that the shipyards will be able to schedule most of the contract work around the remediation efforts with few exceptions. A 10 percent delay in the schedule has been anticipated to accommodate necessary ship movements in order to minimize short-term and long-term losses of shipyard uses and those of other San Diego Bay-dependent facilities. Additionally, the project has incorporated an alternative truck route for Staging Areas 1 through 4 in order to minimize adverse impacts to residential areas.

[1] The Tentative CAO established alternative cleanup levels for the project that are the lowest technologically and economically achievable levels, as required under the California Code of Regulations (CCR) Title 23 section 2550.4(e).

Overall, the implementation of the proposed project meets all project objectives and results in the improvement of water quality in San Diego Bay to ensure its beneficial uses and for present and future generations.

5.4 SELECTION OF ALTERNATIVES

Section 21100 of the Public Resources Code (PRC) and CCR section 15126 of the CEQA Guidelines require an EIR to identify and discuss a No Project/No Development Alternative as well as a reasonable range of alternatives to the proposed project that would feasibly attain most of the basic objectives of the project and would avoid or substantially lessen any of the significant environmental impacts. This section describes alternatives that were considered by the San Diego Water Board but ultimately rejected, discusses alternative sites for the proposed project, and outlines the CEQA alternatives selected for consideration in this PEIR.

5.4.1 Alternatives Considered But Not Studied Further

Section 15126.6(c) of the CEQA Guidelines requires EIRs to identify any alternatives that were considered by the Lead Agency but were rejected during the scoping process and briefly explain the reasons underlying the Lead Agency's determination. In evaluating an appropriate range of alternatives to the proposed project, a number of alternatives were considered and rejected by the San Diego Water Board. The alternatives considered and rejected for the proposed project are described below.

5.4.1.1 Ocean Disposal

This alternative consisted of dredging the remedial footprint consistent with the Tentative CAO and DTR. However, under this alternative, the dredged sediments would be not dewatered, treated, and trucked to a landfill site. Under this alternative, the sediments would be disposed of by barge at a United States Environmental Protection Agency (U.S. EPA) approved ocean disposal site. The ocean disposal site for the San Diego area is San Diego 100 Fathom, more commonly known as LA-5. Disposal at LA-5 is limited to dredged materials that comply with U.S. EPA Ocean Dumping Regulations and Corps Permitting Regulations. In addition, if material were tested and found to be suitable for open water ocean disposal, Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 requires authorization from the United States Army Corps of Engineers (ACOE) for transportation of dredged material for disposal in the ocean where it is determined that the disposal will not unreasonably degrade or endanger human health, welfare, or amenities; the marine environment or ecological systems; or economic potentialities.

Based on the preliminary analysis conducted in support of the Tentative CAO, sediments that were identified for remedial action within the remedial footprint exceeded sediment cleanup levels and/or failed toxicity testing guidance, and/or did not meet benthic community composition for ocean disposal. Chemicals of concern that exceeded their sediment screening criteria within the identified remedial footprints include metals (arsenic, cadmium, chromium, copper, lead, mercury, silver, selenium, zinc), butyltins (mono, di, tetra, and tri), high molecular weight polynuclear aromatic hydrocarbons (HPAHs), polychlorinated biphenyls (PCBs), polychlorinated terphenyls (PCTs), Diesel Range Organics (DRO), and Residual Range Organics (RRO).

Therefore, because the sediments would not meet the criteria for ocean disposal due to the elevated chemical concentrations, this alternative was not deemed feasible and was rejected from further consideration by the San Diego Water Board.

5.4.1.2 Confined Disposal Facility (CDF) with New Pier Use

This alternative consisted of the creation of a CDF utilizing sheet pile walls or other structural means to contain the sediments. This alternative would have included the beneficial use of placing the dredged sediment into, and in order to create, a new pier area. Sediment would be mixed with pozzolanics and placed by clamshell application. This alternative would have required a dry cell sufficiently large enough to contain all the sediment and to allow placement, working, and treatment of the material.

The CDF with New Pier Use Alternative would meet the primary project objectives by removing the sediment within the identified remediation area. This alternative assumes the dredging of the same amount of contaminated sediment as the proposed project. Therefore, construction equipment/vehicle emissions during the dredging operations of the sediment would still result in NO_X emissions that would exceed the daily emissions threshold established by the City of San Diego and National City for that pollutant. Because the SDAB is presently in nonattainment for O_3, construction activities for this alternative, in conjunction with other planned projects, would also contribute to construction-related adverse cumulative air quality impacts. Therefore, this alternative would not avoid or substantially lessen the unavoidable adverse air quality impacts associated with the proposed project.

Consistent with CEQA Guidelines section 15126.6(f)(1), the San Diego Water Board determined that they did not already own and could not reasonably acquire, control or otherwise have access to a site on which to construct a CDF pier structure. Therefore, due to the lack of ownership or access to an adequate land site required for implementation of this alternative, and because this alternative would not eliminate or substantially lessen the unavoidable adverse air quality impacts associated with the proposed project, this alternative was rejected from further consideration.

5.4.1.3 CDF with New Non-Load-Bearing Pier

This alternative is a CDF similar to the new Pier Use Alternative described above. However, under this alternative, the sediment placed in a new pier area would not be load bearing. The pier load would be designed to rest on piles. Sediment would be placed in the CDF by clamshell and would be contained by sheet pile walls on all sides. Sediment would not require mixing with pozzolanics. This alternative assumed a partially dry cell would be used to minimize water treatment.

The CDF with a Non-Load-Bearing Pier Alternative would meet the primary project objectives by removing the sediment within the identified remediation area. This alternative assumes the dredging of the same amount of contaminated sediment as the proposed project. Therefore, construction equipment/vehicle emissions during the dredging operations of the sediment would still result in NO_X emissions that would exceed the daily emissions threshold established by the City of San Diego and National City for that pollutant. Because the SDAB is presently in nonattainment for O_3, construction activities for this alternative, in conjunction with other planned projects, would also contribute to construction-related adverse cumulative air quality impacts. Therefore this alternative would not avoid or substantially lessen the unavoidable adverse air quality impacts associated with the proposed project.

Consistent with CEQA Guidelines section 15126.6(f)(1), the San Diego Water Board determined that they did not already own and could not reasonably acquire, control or otherwise have access to a site on which to construct a CDF non-load-bearing pier. Therefore, due to the lack of ownership or access to an adequate land site required for implementation of this alternative, and because this alternative would not eliminate or substantially lessen the unavoidable adverse air quality impacts associated with the proposed project, this alternative was rejected from further consideration.

5.4.1.4 Alternative Locations

CEQA Guidelines section 15126.6(f)(2)(A) states: "The key question [with regard to alternative locations] and first step in analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR." Further, CEQA Guidelines section 15126.6(f)(1) states that alternative locations only need be considered if the project proponent can reasonably acquire or already owns the identified alternative site.

The proposed project is location-specific, as the primary objective of the project is to improve water quality in San Diego Bay by removing the contaminated sediments from the identified remedial footprint, consistent with the provisions of the DTR prepared in support of Tentative CAO No. R9-2010-0002. Given that the contaminated sediments are site-specific, there are no alternative locations; therefore, the PEIR does not include analysis regarding alternative locations. Further, the PEIR includes five alternative staging areas for dewatering, treatment, and stockpiling of the sediments prior to removal to a landfill facility. Therefore, alternative landside staging locations have been already incorporated as a component of the project and have been considered and analyzed throughout the PEIR.

5.4.2 PEIR Alternatives

Consistent with the CEQA Guidelines criteria for selection of project alternatives, the following four alternatives have been determined to represent a reasonable range of alternatives that have the potential to feasibly attain most of the basic objectives of the project but that may avoid or substantially lessen any of the significant impacts of the project. Therefore, the alternatives considered in this PEIR include the following:

- **Alternative 1:** No Project/No Development
- **Alternative 2:** Confined Aquatic Disposal (CAD) Site
- **Alternative 3:** Convair Lagoon Confined Disposal Facility (CDF)
- **Alternative 4:** CDF with Beneficial Use of Sediments

5.5 ALTERNATIVE 1: NO PROJECT/NO DEVELOPMENT ALTERNATIVE

Consistent with Section 15126.6(e) of the CEQA Guidelines, the No Project Alternative is the existing condition of the project site at the time the NOP was published on November 25, 2009, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved and implemented. The setting of the site at the time of the NOP is described throughout Chapter 4.0 of this PEIR with respect to individual environmental issues and forms the baseline of the impact assessment of the proposed project. This alternative summarizes environmental conditions that would exist if the project were not implemented.

This alternative evaluates circumstances under which the project does not proceed. Alternative 1 would not implement the Tentative CAO, and no cleanup of the contaminated marine sediments in San Diego Bay would occur.

5.5.1 Attainment of Project Objectives

Under the No Project Alternative, the accumulation of waste in the San Diego Bay marine sediments would continue to adversely affect aquatic life, aquatic-dependent wildlife, human health, and San Diego Bay beneficial uses. Alternative 1 would not implement any of the San Diego Water Board’s basic objectives or overall goal to remediate the contaminated marine sediments. Further, the No Project Alternative is not consistent with the DTR for the Tentative CAO. A more detailed summary of the attainment of project objectives under Alternative 1 is provided below.

- Alternative 1 would not attain the cleanup levels and would not remediate areas as identified in the Tentative CAO because the Tentative CAO would not be implemented. Therefore, Alternative 1 would not protect the quality of the waters of San Diego Bay for the use and enjoyment by the people of the state.
- Alternative 1 would not reduce or minimize adverse effects to aquatic life beneficial uses, aquatic-dependent wildlife beneficial uses, or human health beneficial uses because the contaminated sediments would remain in place.
- Alternative 1 would not implement a cleanup plan and would not realize any long-term public benefits associated with the cleanup of the contaminated marine sediments; the site would continue to constitute a public nuisance by being injurious to human health, obstructing the free use of property, and interfering with the comfortable enjoyment of life and property.
- Because there is no construction or dredging activity associated with Alternative 1, this alternative would not result in any long-term or short-term loss of use of shipyard and other San Diego Bay-dependent facilities; however, the nuisance and public health effects of the contaminated sediments would continue to have a negative impact on San Diego Bay-dependent facilities and beneficial uses.

5.5.2 Environmental Analysis

In leaving the site in its current condition, the elevated levels of pollutants above San Diego Bay background conditions would continue to exist in the bottom marine sediments of the bay. The existing contaminants in the sediments would continue to adversely affect aquatic life, aquatic-dependent wildlife, human health, and San Diego Bay beneficial uses. Alternative 1 would not improve water quality in San Diego Bay and would not reduce the threats to the health and safety of either marine communities or humans.

No temporary construction traffic or noise would occur, and this alternative would not create air quality impacts, contribute to global warming, or generate objectionable odors as no construction equipment would be present. There would be no risk of accidental spills related to hazards as no cleanup activities would occur. In addition, no temporary impacts to marine species or communities would occur.

5.5.3 Conclusion

Alternative 1 would not result in any new physical environmental effects and would avoid significant construction-related impacts to air quality. Alternative 1 would not further, and therefore would be inconsistent with, the project objectives.

5.6 ALTERNATIVE 2: CONFINED AQUATIC DISPOSAL (CAD) SITE

Alternative 2 consists of dredging and constructing a CAD facility at a yet to be determined location. A CAD facility is a submerged containment area where dredged material is placed. This technique has been employed in San Diego Bay and elsewhere in the country and can simultaneously be enhanced to provide aquatic habitat. The construction of the CAD facility would require dredging a sufficient amount of marine sediments in order to construct a CAD facility large enough to contain the contaminated sediments from the Shipyard Sediment Site. The CAD facility would be constructed by mechanically dredging a large disposal area. A disposal location for the dredged materials would need to be determined. However, for purposes of this alternatives analysis, it is assumed that a majority of the sediments removed for construction of the CAD facility could be barged to an ocean disposal location. The location, size, shape, and design of the CAD facility would be determined during the design phase.

Alternative 2 involves the mechanical dredging of debris and sediments from the Shipyard Sediment Site. Contaminated marine sediments would be transported by barge to the CAD facility and deposited. The excess noncontaminated sediment from the CAD facility can be beneficially used as cover next to structures and under piers where dredging is infeasible. Debris removed from the project site would be taken to a landside staging area and sampled. The debris would be trucked to the appropriate landfill facilities after sampling was completed.

Once all the contaminated marine sediments have been placed in the CAD facility, and a sufficient amount of time had passed to allow the sediments to consolidate in the CAD facility, a clean cap of material would be put in place as a cover to contain the CAD facility. The CAD facility would require Waste Discharge Requirements (WDRs) issued by the San Diego Water Board for the design and construction of the CAD facility as well as ongoing monitoring to ensure that the CAD cap maintains its integrity for sequestering underlying contaminants, and that the marine biological community was re-establishing itself and was not adversely affected in the immediate area of the CAD facility.

5.6.1 Attainment of Project Objectives

Alternative 2 would obtain the project objectives, would implement the San Diego Water Board's overall goal to improve water quality in San Diego Bay, and would remove the contaminated sediments within the remedial footprint. Alternative 2 is consistent with the DTR for Tentative CAO No. R9-2010-0002, Finding 30 (pages 30-5 and 30-6). A more detailed summary of the attainment of project objectives under Alternative 2 is provided below.

- Alternative 2 would attain the cleanup levels and remediate areas as identified in the Tentative CAO; therefore, Alternative 2 would protect the quality of the waters of San Diego Bay for its use and enjoyment by the people of the state.
- Alternative 2 would reduce or minimize adverse effects to aquatic life beneficial uses, aquatic-dependent wildlife beneficial uses, and human health beneficial uses by the removal and/or covering of the contaminated sediments in the remedial footprint.
- Alternative 2 would implement a cleanup plan that would have long-term effectiveness and would realize long-term public benefits associated with the cleanup of the contaminated marine sediments. The site would no longer constitute a public nuisance.
- Because Alternative 2 would relocate the sediments within San Diego Bay via barge, Alternative 2 would not require as large a landside staging area for dewatering and treatment of the sediments as the proposed project; therefore, Alternative 2 would reduce the number of trucks required and minimize the adverse effects to residential areas and the built environment.
- The location of the CAD facility for Alternative 2 is unknown at this time; therefore, it is unknown whether this alternative would result in any short-term or long-term loss of use of shipyard or other San Diego Bay-dependent facilities.

5.6.2 Environmental Analysis

5.6.2.1 Transportation

Alternative 2 does not involve the landside dewatering, treatment, and hauling of the dredged sediments. Alternative 2 would result in fewer vehicular trips than the proposed project since the dredged sediments from the remedial footprint would be transported by barge to the CAD facility and would not require landside treatment or trucking to a landfill. Although some debris removed from the site would require sampling and possibly treatment at a landside staging area, and some worker trips would be associated with this alternative, the majority of trucks trips associated with the proposed project would not occur. The proposed project generates a total of approximately 50 haul trucks, 8 delivery trucks, and 29 employees to the project site on the busiest day, resulting in 348 passenger car equivalent (PCE) daily trips.[1]

[1] The *Traffic Impact Analysis* (LSA Associates, May 2011) converted the haul and delivery truck trips to PCE trips at a ratio of 2.5 passenger cars per truck.

Alternative 2 would not require off-site trucking and therefore would significantly reduce the traffic generated as compared to the proposed project. Under this alternative, the project-related significant impacts for the I-5 southbound ramp/Boston Avenue intersection and the roadway segment of Boston Avenue between 28th Street and the I-5 southbound ramp would not occur, and no alternate truck route would be required as mitigation.

Although the location or need for any landside staging area is unknown at this time, Alternative 2 would not require a large staging area; therefore, many alternative staging sites could be suitable for this alternative. Because there would be more options for selection of a construction staging area, there would be more opportunities to locate the staging activity away from the planned Bayshore Bikeway and also to avoid a short-term loss of any employee parking facilities. Therefore, Alternative 2 would have less potential for project-related tuck trips to interfere with the implementation and/or operation of the Bayshore Bikeway and employee parking, and would most likely not require any mitigation related to those potential impacts.

In conclusion, the traffic impacts of Alternative 2 would be significantly reduced as compared to the proposed project, but would remain less than significant, similar to the proposed project.

5.6.2.2 Water Quality

Water quality impacts related to the dredging operations of Alternative 2 would be similar to the proposed project. Similar impacts due to resuspension, spillage, and misplaced sediment during dredging operations would be anticipated during operation of Alternative 2, compared to the proposed project. Water quality Best Management Practices (BMPs) (including visual monitoring and recording of water turbidity during the dredging operations), measures to adhere to water quality objectives in the Water Quality Control Plan for the San Diego Basin (Basin Plan), and utilization of a double silt curtain to contain the dredge area would be included under Alternative 2, similar to the proposed project.

Alternative 2 would require WDRs issued by the San Diego Water Board for the design and construction of the CAD facility. Alternative 2 would require implementation of additional BMPs, treatment measures, and monitoring requirements related to the construction of the CAD facility and to ensure that the CAD cap maintains its integrity for sequestering underlying contaminants.

Alternative 2 would not require the landside dewatering, treatment, and disposal of sediments and therefore would not require a National Pollutant Discharge Elimination System (NPDES) General Permit for storm water discharges. Further, Alternative 2 would not have impacts related to potential contamination of runoff and would not discharge any decanted water to the sewer system.

Similar to the proposed project, Alternative 2 would result in the removal of contaminated sediments and would result in improved water quality conditions in the San Diego Bay waters as compared to existing conditions. Overall, both Alternative 2 and the proposed project would result in similar improvements to water quality.

5.6.2.3 Hazards and Hazardous Materials

Similar to the proposed project, Alternative 2 would involve the dredging of contaminated sediments within the remedial footprint. Therefore, this alternative has the same potential as the proposed project to create a hazard to the environment through the routine transport, use, or disposal of hazardous materials, and upset and accident conditions involving the release of hazardous materials into the environment. Alternative 2 would have a slightly greater risk related to the release of contaminated sediments into the marine environment due to the relocation and placement of the sediments into the CAD facility.

Alternative 2 would not involve the landside dewatering, treatment, and trucking of the sediments to a landfill, and therefore would have reduced impacts associated with those activities as compared to the proposed project.

Overall, potential impacts related to hazards and hazardous materials impacts for Alternative 2 are slightly reduced as compared to the proposed project because activities related to the treatment and trucking of sediments are not required for implementation of this alternative.

5.6.2.4 Noise

Construction noise levels associated with the dredging activities of Alternative 2 would be similar to those of the proposed project since the same amount of sediment would be removed. However, unlike the proposed project, Alternative 2 would generate additional noise associated with the construction of the CAD facility as well as the barge activities associated with placement of the dredged sediment within the CAD facility.

No landside dewatering, treatment or trucking of dredged sediments would occur under Alternative 2. Therefore, similar to the proposed project, construction noise impacts for Alternative 2 are not expected to exceed the construction noise thresholds established by either the City of San Diego (75 A-weighted decibels [dBA] at an equivalent continuous sound level [L_{eq}]) or National City (75 dBA at a maximum noise level [L_{max}]). However, because there would be a significant reduction in the amount of truck traffic associated with Alternative 2, noise impacts on sensitive receptors due to construction traffic are substantially reduced with Alternative 2 as compared to the proposed project.

The elimination of landside dewatering, treatment, and transport of dredged sediments under Alternative 2 would result in fewer noise impacts overall as compared to the proposed project.

5.6.2.5 Marine Biological Resources

The proposed project's dredging operations will result in the temporary loss of marine invertebrates and fish within the area contained within the silt curtains, as well as impacts to eelgrass areas and a reduction in the available foraging area for local marine mammals, marine reptiles, fish-eating birds, and various fish species.

Similar to the proposed project, Alternative 2 would involve the dredging of contaminated sediments within the remedial footprint. Therefore, Alternative 2 would result in similar impacts to marine resources within the remedial footprint area. Those impacts would be less than significant with implementation of mitigation measures, similar to the proposed project.

Alternative 2 includes additional areas within the San Diego Bay waters that would be disturbed due to the construction and filling of the CAD facility. Although the location of the CAD facility is not known at this time, this alternative would have a slightly greater potential to impact marine resources due to the additional construction activities and placement of a permanent structure in the waters of San Diego Bay. Further, although ongoing monitoring would be required to ensure that the CAD cap maintains its integrity, Alternative 2 could have greater impacts if the CAD facility did not effectively sequester underlying contaminants and the marine biological community did not re-establish itself. However, construction of the CAD could also present an opportunity to simultaneously provide enhanced or restored aquatic habitat (i.e. return of previously dredged areas to a depth suitable for eelgrass beds). Therefore, impacts to marine biological resources are considered slightly greater under Alternative 2 due to the potential for impacts to be affected in the immediate area of the CAD facility.

In conclusion, the potential marine biological impacts of Alternative 2 would be slightly increased as compared to the proposed project, but would remain less than significant with mitigation, similar to the proposed project.

5.6.2.6 Air Quality

The proposed project would result in significant and unavoidable construction-related adverse air quality impacts of NO_X emissions during the dredging and landside staging operation phases of the project.

Because there would be no landside dewatering, treatment, and no significant off-site trucking activities associated with Alternative 2, NO_X emissions associated with landside staging operations would not be anticipated to exceed thresholds. Therefore, Alternative 2 would eliminate or substantially reduce the significant and adverse impacts related to these issues.

Although landside construction activities would be substantially reduced under Alternative 2, the construction and filling of the CAD facility as proposed under Alternative 2 would increase the amount of marine vessel operations and resulting emissions. Therefore, although Alternative 2 would generate NO_X emissions during dredging of the remedial footprint similar to the proposed project, the operations associated with construction and filling of the CAD facility would generate marine vessel emissions greater than the proposed project, and those NO_X emissions would remain a significant adverse impact for Alternative 2.

Similar to the proposed project, Alternative 2 would also contribute to construction-related adverse cumulative air quality impacts because the SDAB is presently in nonattainment for O_3, and this alternative, in conjunction with other planned projects, would contribute to the existing nonattainment status for O_3.

5.6.2.7 Climate Change and Greenhouse Gas Emissions

Similar to the proposed project, Alternative 2 would result in short-term emissions associated with the use of construction equipment for dredging activities, but would not create an ongoing increase in or contribution to climate change because there are no on-site stationary sources. Although landside construction activities would be substantially reduced under Alternative 2, the construction and filling of the CAD facility as proposed would result in an increased amount of marine vessel operations and resulting emissions as compared to the proposed project.

Similar to the proposed project, Alternative 2 would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases (GHGs), and impacts associated with this issue would be less than significant.

Overall, Alternative 2 would have a less than significant impact related to its contribution to global climate change (GCC) in the form of GHG emissions, similar to the proposed project.

5.6.3 Conclusion

Alternative 2 would meet the project objectives and would implement the San Diego Water Board's overall goal to improve water quality in San Diego Bay. Alternative 2 would remove the contaminated sediments within the remedial footprint and would attain the cleanup levels as identified in the Tentative CAO.

The significant project impacts related to landside construction air quality would be avoided under Alternative 2. However, air quality emissions associated with dredging activities (due to construction vessels and equipment) would increase under this alternative and remain a significant adverse impact. In addition, Alternative 2 would not avoid the significant cumulative air quality impacts related to the nonattainment status for O_3.

The potential marine biological impacts of Alternative 2 would be slightly increased as compared to the proposed project, but would remain less than significant with mitigation, similar to the proposed project. Alternative 2 would result in impacts similar to the proposed project for water quality, hazards, and climate change. However, Alternative 2 would result in reduced impacts for traffic and noise as compared with the proposed project.

5.7 ALTERNATIVE 3: CONVAIR LAGOON CONFINED DISPOSAL FACILITY (CDF)

Alternative 3 consists of the creation of a nearshore CDF at Convair Lagoon. A CDF is an engineered structure consisting of dikes or other retaining structures that extend above any adjacent water surface and enclose a disposal area for containment of dredged material, thereby isolating the dredged material from adjacent waters or land. A nearshore CDF typically creates new shoreline. The proposed Alternative 3 Convair Lagoon CDF would be constructed by removing abandoned ramps and sub-marine structures and excavating marine soils from the Convair Lagoon site. The excavated materials would most likely be trucked to an upland landfill. Rock revetment would then be utilized to create an in-water area to contain the sediments. The precise size, shape, and design of the CDF would be determined during the design phase.

Similar to the CAD Alternative, the CDF Alternative involves the mechanical dredging of debris and sediments from the shipyard site. Contaminated marine sediments would be transported by barge to the CDF and deposited. Debris removed from the sediment remediation site would be taken to a landside staging area and sampled. The debris would be trucked to the appropriate landfill facilities after sampling was completed.

No dewatering of contaminated sediments would be required with the CDF Alternative. The placement and construction of the CDF would allow water to pass through as the contaminated sediments are placed from the barge into the CDF. The CDF will require WDRs issued by the San Diego Water Board for the design and construction of the CDF ongoing monitoring to ensure that the CDF cap maintains its integrity for sequestering underlying contaminants, and marine biological communities to be re-established and not adversely affected in the immediate area of the CDF structure.

The CDF Alternative is consistent with the DTR for Tentative CAO No. R9-2010-0002, Finding 30 (pages 30-5 and 30-6).

5.7.1 Attainment of Project Objectives

Alternative 3 would obtain the project objectives and would implement the San Diego Water Board's overall goal to improve water quality in San Diego Bay. Alternative 3 would remove the contaminated sediments within the remedial footprint and is consistent with the DTR for Tentative CAO No. R9-2010-0002, Finding 30 (pages 30-5 and 30-6). A more detailed summary of the attainment of project objectives under Alternative 3 is provided below.

- Alternative 3 would attain the cleanup levels and remediate areas as identified in the Tentative CAO; therefore, Alternative 3 would protect the water quality of San Diego Bay for the use and enjoyment by the people of the state.
- Alternative 3 would reduce or minimize adverse effects to aquatic life beneficial uses, aquatic-dependent wildlife beneficial uses, and human health beneficial uses by the removal and/or covering of the contaminated sediments in the remedial footprint.
- Alternative 3 would implement a cleanup plan that would have long-term effectiveness and would realize long-term public benefits associated with the cleanup of the contaminated marine sediments; the site would no longer constitute a public nuisance.

5.7.2 Environmental Analysis

A complete analysis of the potential impacts related to Alternative 3, the Convair Lagoon CDF, was completed by Atkins and is included in Section 5.10 of this chapter. Technical appendices in support of the Convair Lagoon CDF Alternative Analysis are included as Appendices I through O of this PEIR.

The Convair Lagoon CDF Alternative would have either a less than significant impact or no impact associated with the following topics: Aesthetics, Agricultural and Forestry Resources, Mineral Resources, Population and Housing, Public Services, Recreation, Transportation and Traffic, and Utilities and Service Systems.

Implementation of the Convair Lagoon CDF Alternative could result in potentially significant impacts to the following environmental topics: Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology/Water Quality, and Land Use/Planning. Please refer to Section 5.10 for a complete discussion of impacts and mitigation associated with each of these topics for Alternative 3.

5.7.3 Conclusion

The Convair Lagoon CDF Alternative would meet the project objectives and would implement the San Diego Water Board's overall goal to improve water quality in San Diego Bay. Alternative 3 would remove the contaminated sediments within the remedial footprint and would attain the cleanup levels as identified in the Tentative CAO.

The significant project air quality impacts related to construction emissions would be reduced but not avoided under Alternative 3. Further, air quality emissions associated with dredging activities (due to construction vessels and equipment) would increase under this alternative due to the removal and construction activities associated with the construction of the CDF. These air quality impacts would remain a significant adverse impact. In addition, Alternative 3 would not avoid the significant cumulative air quality impacts related to the nonattainment status for O_3.

The potential marine biological impacts and traffic impacts of the Convair Lagoon CDF Alternative would be greater as compared to the proposed project, but would remain less than significant with mitigation, similar to the proposed project. Alternative 3 would result in impacts similar to the proposed project for water quality, hazards, noise, and climate change.

5.8 ALTERNATIVE 4: NEARSHORE CDF WITH BENEFICIAL USE OF SEDIMENTS

The Alternative 4 CDF is similar to Alternative 3 in that it would create a nearshore CDF; however, Alternative 4 includes the beneficial use of placing the contaminated sediment as cover for areas under existing piers that cannot be dredged. The placed sediment would be contained by sheet pile walls on both sides. The contaminated sediment would be dredged from the project site, mixed with water to create a heavy slurry, and then mixed with pozzolanics and pumped in-place under the structures. Existing water will be pumped out and any decanted or infiltrated water will be treated prior to release.

The area under the piers that cannot be dredged is not large enough to contain all of the contaminated sediment; consequently, landfill disposal will be necessary for the excess. The excess would be transported by barge to a landside staging area, treated, and then trucked to an upland facility. Similarly, debris removed from the Shipyard Sediment Site would be taken to the landside staging area and sampled. The debris would be trucked to the appropriate landfill facilities after sampling was completed.

Alternative 4 is consistent with the DTR for the Tentative CAO No. R9-2010-0002, Finding 30 (pages 30-5 and 30-6)

5.8.1 Attainment of Project Objectives

Alternative 4 would obtain the project objectives and would implement the San Diego Water Board's overall goal to improve water quality in San Diego Bay. Alternative 4 would remove the contaminated sediments within the remedial footprint and is consistent with the DTR for Tentative CAO No. R9-2010-0002, Finding 30 (pages 30-5 and 30-6). A more detailed summary of the attainment of project objectives under Alternative 4 is provided below.

- Alternative 4 would attain the cleanup levels and remediate areas as identified in the Tentative CAO; therefore, Alternative 4 would protect the quality of the waters of San Diego Bay for the use and enjoyment by the people of the state.
- Alternative 4 would reduce or minimize adverse effects to aquatic life beneficial uses, aquatic-dependent wildlife beneficial uses, and human health beneficial uses by the removal and/or covering of the contaminated sediments in the remedial footprint.
- Alternative 4 would implement a cleanup plan that would have long-term effectiveness and would realize long-term public benefits associated with the cleanup of the contaminated marine sediments; the site would no longer constitute a public nuisance.
- Although Alternative 4 would require a landside staging area for dewatering and treatment of the excess sediments, the amount of land would be reduced as compared to the proposed project. Therefore, this alternative would reduce the number of trucks required to transport the excess sediment, thus minimizing the adverse effects to residential areas and the built environment.
- The location of the CDF for Alternative 4 is unknown at this time; therefore, it is unknown whether this alternative would result in any short-term or long-term loss of use of shipyard or other San Diego Bay-dependent facilities.

5.8.2 Environmental Analysis

5.8.2.1 Transportation and Circulation

Alternative 4 involves a reduced amount of dewatering, treatment, and fewer vehicle trips than the proposed project since only the excess sediments that cannot be placed as cover for areas under existing piers would require landside treatment and trucking to a landfill.

The proposed project generates a total of approximately 50 haul trucks, 8 delivery trucks, and 29 employees to the project site on the busiest day, resulting in 348 PCE.[1] Alternative 4 would reduce the amount of sediments requiring off-site trucking and therefore would significantly reduce the traffic generated as compared to the proposed project. Although the average daily trips would be reduced under Alternative 4, impacts related to traffic and

[1] The *Traffic Impact Analysis* (LSA Associates, May 2011) converted the haul and delivery truck trips to PCE trips at a ratio of 2.5 passenger cars per truck.

circulation would remain less than significant with proposed mitigation for this alternative, similar to the proposed project.

Although the location and size of the landside staging area is unknown at this time, Alternative 4 would not require as large a staging area as the proposed project; therefore, many alternative construction staging areas could be suitable for this alternative. Because there would be more options for selection of a construction staging area, there would be more opportunities to locate the staging activity away from the planned Bayshore Bikeway and also avoid a short-term loss of any employee parking facilities. Therefore, Alternative 4 would have less potential for project-related tuck trips to interfere with implementation and/or operation of the Bayshore Bikeway or employee parking. Therefore, impacts related to these issues are less under Alternative 4 than for the proposed project.

In conclusion, traffic impacts of Alternative 4 would remain less than significant, similar to the proposed project, but would be reduced as compared to the proposed project.

5.8.2.2 Hydrology and Water Quality

Water quality impacts related to the dredging operations of Alternative 4 would be similar to the proposed project. Similar impacts due to resuspension, spillage, and misplaced sediment during dredging operations would be anticipated during operation of Alternative 4 compared to the proposed project. Water quality BMPs (including visual monitoring and recording of water turbidity during the dredging operations), measures to adhere to water quality objectives in the Basin Plan, and utilization of a double silt curtain to contain the dredge area would be included under Alternative 4, similar to the proposed project.

Alternative 4 would require WDRs issued by the San Diego Water Board for the design and construction of the CDF. Alternative 4 would require implementation of additional BMPs, treatment measures, and monitoring requirements related to construction of the CDF and to ensure that the CDF covering maintains its integrity for sequestering underlying contaminants.

Alternative 4 would not require as much landside dewatering, treatment, and disposal of sediments as the proposed project, but would still require a NPDES General Permit for storm water discharges. Further, Alternative 4 would have potential impacts similar to the proposed project that are related to the potential contamination of runoff and discharge of any decanted water to the sewer system.

Similar to the proposed project, Alternative 4 would result in the removal of contaminated sediments and improved water quality conditions in San Diego Bay as compared to existing conditions. Overall, both Alternative 4 and the proposed project would result in similar improvements to water quality.

5.8.2.3 Hazards and Hazardous Materials

Similar to the proposed project, Alternative 4 would involve the dredging of contaminated sediments within the remedial footprint. Therefore, this alternative has the same potential as the proposed project to create a hazard to the environment through the routine transport, use, or disposal of hazardous materials and upset and accident conditions involving the release of hazardous materials into the environment. Alternative 4 would have a slightly greater risk related to the release of contaminated sediments into the marine environment due to the relocation and placement of the sediments in the CDF.

Alternative 4 would involve a lesser amount of dewatering, treatment, and trucking of sediments to a landfill, and therefore would have reduced impacts associated with those activities as compared to the proposed project.

Overall, potential impacts related to hazards and hazardous materials for Alternative 4 are slightly reduced as compared to the proposed project because activities related to the treatment and trucking of sediments are reduced under this alternative.

5.8.2.4 Noise

Construction noise levels associated with the dredging activities for Alternative 4 would be similar to those for the proposed project since the same amount of sediment would be removed. However, unlike the proposed project, Alternative 4 would generate additional noise associated with the construction of the CDF as well as the barge activities associated with placement of the dredged sediment within the CDF.

A reduced amount of landside dewatering, treatment, and trucking of dredged sediments would occur under Alternative 4. Therefore, similar to the proposed project, construction noise impacts for Alternative 4 are not expected to exceed the construction noise thresholds established by either the City of San Diego (75 dBA L_{eq}) or National City (75 dBA L_{max}). However, because there would be a reduction in the amount of truck traffic associated with Alternative 4, noise impacts on sensitive receptors due to construction traffic would be reduced under Alternative 4 as compared to the proposed project.

The reduction in the amount of dewatering, treatment, and transport of dredged sediments under Alternative 4 would result in fewer noise impacts overall as compared to the proposed project.

5.8.2.5 Marine Biological Resources

The proposed project's dredging operations will result in the temporary loss of marine invertebrates and fish within the area contained within the silt curtains, as well as impacts to eelgrass areas and a reduction in the available foraging area for local marine mammals, marine reptiles, fish-eating birds, and various fish species.

Similar to the proposed project, Alternative 4 would involve the dredging of contaminated sediments within the remedial footprint. Therefore, Alternative 4 would result in similar impacts to marine resources within the remedial footprint area. Those impacts would be less than significant with implementation of mitigation measures, similar to the proposed project.

Alternative 4 includes the creation of a CDF and placement of the dredged sediments under pier areas. This alternative would have a slightly greater potential to impact marine resources in the waters of San Diego Bay due to the additional construction and filling activities associated with the CDF. Further, although ongoing monitoring would be required to ensure that the CDF covering maintains its integrity, Alternative 4 could have greater impacts if the covering did not effectively sequester underlying contaminants and the marine biological community did not re-establish itself. Therefore, impacts to marine biological resources are considered slightly greater under Alternative 4 due to the potential for impacts to be affected in the immediate area of the CDF.

In conclusion, the potential marine biological impacts of Alternative 4 would be slightly increased as compared to the proposed project, but would remain less than significant with mitigation, similar to the proposed project.

5.8.2.6 Air Quality

The proposed project would result in significant and unavoidable construction-related adverse air quality impacts of NO_X emissions during the dredging and landside staging operation phases of the project.

Because there would be a reduced amount of dewatering, treatment, and off-site trucking activities under Alternative 4, NO_X emissions associated with landside staging operations would be reduced as compared to the proposed project. Although the amount of excess sediment that would require dewatering and removal by trucks is not known at this time, Alternative 4 would reduce the significant and adverse impacts related to construction-related NO_X emissions.

Although landside construction activities would be reduced under Alternative 4, the construction and placement of sediments for the CDF as proposed under Alternative 4 would increase the amount of marine vessel operations and resulting emissions. Therefore, although Alternative 4 would generate NO_X emissions during dredging of the remedial footprint similar to the proposed project, the operations associated with the CDF would generate marine vessel emissions greater than the proposed project, and those NO_X emissions would remain a significant adverse impact for Alternative 4.

Similar to the proposed project, Alternative 4 would also contribute to construction-related adverse cumulative air quality impacts because the SDAB is presently in nonattainment for O_3, and Alternative 4, in conjunction with other planned projects, would contribute to the existing nonattainment status for O_3.

5.8.2.7 Climate Change and Greenhouse Gas Emissions

Similar to the proposed project, Alternative 4 would result in short-term emissions associated with the use of construction equipment for dredging activities, but would not create an ongoing increase in or contribution to climate change because there are no on-site stationary sources. Although landside construction activities would be reduced under Alternative 4, the construction and filling of the CDF as proposed would result in an increased amount of marine vessel operations and emissions as compared to the proposed project.

Similar to the proposed project, Alternative 4 would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs, and impacts associated with this issue would be less than significant.

Overall, Alternative 4 would have a less than significant impact related to its contribution to GCC in the form of GHG emissions, similar to the proposed project.

5.8.3 Conclusion

Alternative 4 would meet the project objectives and would implement the San Diego Water Board's overall goal to improve water quality in San Diego Bay. Alternative 4 would remove the contaminated sediments within the remedial footprint and would attain the cleanup levels identified in the Tentative CAO.

The significant project impacts related to landside construction air quality impacts would not be avoided under Alternative 4, but would be lessened. However, air quality emissions associated with dredging activities (due to construction vessels and equipment) would increase under this alternative and remain a significant adverse impact. In addition, Alternative 4 would not avoid the significant cumulative air quality impacts related to the nonattainment status for O_3.

The potential marine biological impacts of Alternative 4 would be slightly increased as compared to the proposed project, but would remain less than significant with mitigation, similar to the proposed project. Alternative 4 would result in similar impacts as the proposed project for water quality and climate change. However, Alternative 4 would result in reduced impacts for traffic, hazards, and noise as compared with the proposed project.

5.9 IDENTIFICATION OF ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The No Project/No Development Alternative (Alternative 1) would be environmentally superior to the proposed project because the direct physical effects of the proposed project would not occur with Alternative 1. If there were no changes to the existing conditions on site, there would be no increase in construction traffic, noise, or air emissions, and the significant effects of the project would be avoided. However, Alternative 1 would not remediate the contaminated marine sediments that currently present a hazard and a nuisance condition. Therefore, the No Project Alternative would cause the environmental impacts related to the existing conditions to be perpetuated.

The No Project/No Development Alternative (Alternative 1) would be environmentally superior to the proposed project because the direct physical effects of the proposed project would not occur with Alternative 1. If there were no changes to the existing conditions on site, there would be no increase in construction traffic, noise, or GHG emissions, and the significant air quality effects of the project would be avoided. In addition, there would be no increased potential impacts related to hazards or marine biological resources. However, Alternative 1 would not remediate the contaminated marine sediments that currently present as a hazard and nuisance to water quality and the beneficial uses of San Diego Bay. Therefore, the No Project Alternative would cause the environmental impacts related to the existing conditions to be perpetuated.

If the Environmentally Superior Alternative is the No Project/No Development Alternative, the CEQA Guidelines require that "the EIR also identify an environmentally superior alternative among the other alternatives" (CEQA Guidelines section 15126.6[e][2]).

Alternatives 2, 3, and 4 would meet all the project objectives. Because the proposed project is the cleanup of contaminated sediment within the waters of San Diego Bay in conformance with the Tentative CAO, all three alternatives would have impacts similar to the proposed project in relation to the dredging activities for removal of the sediments within the remedial footprint. A smaller or less intense project would not adequately remediate the identified areas and would not implement the Tentative CAO as intended by the San Diego Water Board.

Similar to the proposed project, all three alternatives involve the mechanical dredging of debris and sediments from the Shipyard Sediment Remediation Site. All of the project impacts related to the in-water dredging phase of the project would be the same for Alternatives 2, 3, and 4.

The significant and unavoidable impacts of the proposed project include construction-related adverse air quality impacts of NO_X (which is a precursor to O_3) emissions, and construction-related adverse cumulative air quality impacts because the SDAB is presently in nonattainment for O_3. Although Alternative 2 would result in reduced air quality emissions because landside haul trips would be eliminated, the emissions from dredging equipment and barge tugs would still exceed the daily emissions threshold for NO_X. Therefore, this Alternative would not avoid the significant and adverse impacts of the proposed project.

Based on the analysis contained in this section with regard to direct physical effects on the environment, there is no clear Environmentally Superior Alternative to the proposed project. No one alternative would eliminate the significant and adverse impacts of the proposed project.

Table 5.1 provides a comparison of the key impacts of the alternatives, and Table 5-2 provides a comparison of the project alternatives relative to the significant adverse impacts of the proposed project.

Table 5-1: Alternatives Impacts Comparison Matrix

Issue Topic	Proposed Project	Alternative 1: No Project/No Development	Alternative 2: CAD Site	Alternative 3: Convair Lagoon CDF	Alternative 4: CDF with Beneficial Use of Sediments
Traffic and Circulation	• Less than significant impacts with implementation of mitigation measures	• No change from existing conditions • No additional traffic would be generated	• Substantially less construction traffic and circulation impacts than proposed project • Does not require any mitigation related to alternative routes, proposed bikeways, or employee parking at landside staging areas	• Greater construction traffic and circulation impacts than proposed project • Does not require any mitigation related to alternative routes, proposed bikeways, or employee parking at landside staging areas	• Less construction traffic and circulation impacts than proposed project • Truck trips for removal of excess sediment still required under Alternative 4 • Does not require any mitigation related to alternative routes, proposed bikeways, or employee parking at landside staging areas
Water Quality	• Less than significant impacts related to water quality with implementation of mitigation measures	• No change from existing conditions • No improvement to existing water quality conditions	• Same as proposed project but fewer BMPs and permits required due to lack of landside operations • CAD requires additional BMPs, permitting and monitoring for construction and maintenance	• Same as proposed project • Requires additional BMPs, permitting and monitoring due to CDF construction and maintenance	• Same as proposed project • Requires additional BMPs, permitting and monitoring due to CAD/CDF construction and maintenance
Hazards and Hazardous Materials	• Less than significant impacts related to hazards and hazardous materials with implementation of mitigation measures	• No change from existing conditions • No improvement to existing hazards conditions due to contaminated sediment	• Same as proposed project but fewer mitigation measures required due to reduced landside operations	• Similar to the proposed project	• Same as proposed project
Noise	• Less than significant impacts related to noise with implementation of mitigation measures	• No change from existing conditions • No additional noise generated	• Substantially reduced landside construction noise impacts compared to the proposed project	• Similar to the proposed project	• Reduced landside construction noise impacts compared to the proposed project • Noise will be generated from landside operations

Table 5-1: Alternatives Impacts Comparison Matrix

Issue Topic	Proposed Project	Alternative 1: No Project/No Development	Alternative 2: CAD Site	Alternative 3: Convair Lagoon CDF	Alternative 4: CDF with Beneficial Use of Sediments
					and truck trips for removal of excess sediment
Marine Biology	• Less than significant impacts related to marine biological resources with implementation of mitigation measures	• No change from existing conditions • No improvement to the marine resource environment	• Same as proposed project within the remedial dredge footprint • Slightly greater impacts due to construction activities in additional water areas	• Same as proposed project within the remedial dredge footprint • Greater impacts than the proposed project due to construction activities in additional water areas and conversion of bay waters to land.	• Same as proposed project within the remedial dredge footprint • Slightly greater impacts due to construction activities in additional water areas
Air Quality	• Significant and unavoidable impacts related to NO_X emissions during construction • Significant and unavoidable cumulative construction air quality impacts associated with the existing SDAB nonattainment status for O_3	• No change from existing conditions • No contribution to short-term or cumulative air quality emissions	• Haul truck emissions would be significantly lessened • Significant and unavoidable impacts related to NO_X emissions during in-water construction • Significant and unavoidable cumulative construction air quality impacts associated with the existing SDAB nonattainment status for O_3	• Significant and unavoidable NO_X emissions impacts during landside construction due to construction operations • Significant and unavoidable impacts related to NO_X emissions during in-water construction • Significant and unavoidable cumulative construction air quality impacts associated with the existing SDAB nonattainment status for O_3	• Fewer NO_X emissions impacts due to reduced landside construction operations; still may be significant and unavoidable • Significant and unavoidable impacts related to NO_X emissions during in-water construction • Significant and unavoidable cumulative construction air quality impacts associated with the existing SDAB nonattainment status for O_3
Climate Change and GHG Emissions	• Less than significant impact to GHG emissions	• No change from existing conditions	• Same as proposed project	• Similar to ~~Same as~~ proposed project	• Similar to ~~Same as~~ proposed project

Table 5-1: Alternatives Impacts Comparison Matrix

Issue Topic	Proposed Project	Alternative 1: No Project/No Development	Alternative 2: CAD Site	Alternative 3: Convair Lagoon CDF	Alternative 4: CDF with Beneficial Use of Sediments
Meets Project Objectives?	• Meets all project objectives	• Would not satisfy any project objectives	• Meets project objectives	• Meets project objectives	• Meets project objectives
Summary Comparison of Impacts Relative to the Proposed Project	• Not applicable	• No new environmental impacts • Does not meet project objectives	• This alternative would avoid the significant project impacts related to landside construction NO_X emissions • This alternative would not avoid the significant and unavoidable impacts related to NO_X emissions during in-water construction • This alternative would not avoid the significant and unavoidable cumulative construction air quality impacts associated with the existing SDAB non-attainment status for O_3 • This alternative would result in reduced impacts for traffic and noise compared with the proposed project • This alternative would result in slightly greater marine biological impacts compared to the proposed project. • Meets all the project objectives	• This alternative would not avoid the significant and unavoidable impacts related to NO_X emissions during in-water construction • This alternative would not avoid the significant and unavoidable cumulative construction air quality impacts associated with the existing SDAB nonattainment status for O_3 • This alternative would result in increased impacts for traffic compared with the proposed project • This alternative would result in greater marine biological impacts compared to the proposed project. • <u>This alternative would result in less than significant impact to cultural resources.</u> • Meets all the project objectives	• This alternative would reduce the significant project impacts related to landside construction NO_X emissions • This alternative would not avoid the significant and unavoidable impacts related to NO_X emissions during in-water construction • This alternative would not avoid the significant and unavoidable cumulative construction air quality impacts associated with the existing SDAB nonattainment status for O_3 • This alternative would result in reduced impacts for traffic and noise compared with the proposed project • This alternative would result in slightly greater marine biological impacts compared to the proposed project. • Meets all the project objectives

BMPs = Best Management Practices CAD = Confined Aquatic Disposal CDF = Confined Disposal Facility GHG = greenhouse gas NO_X = oxides of nitrogen

Table 5-2: Summary of Alternatives/Significant Impacts

Topic	Significant Effect: Proposed Project	Alternative 1: No Project/No Development	Alternative 2: Confined CAD Site	Alternative 3: Convair Lagoon CDF	Alternative 4: CDF with Beneficial Use of Sediments
Air Quality	• Significant and unavoidable impacts related to NO_X emissions during construction • Significant and unavoidable cumulative construction air quality impacts associated with the existing SDAB nonattainment status for O_3	• No change from existing conditions	• Landside construction air quality NO_X emissions would be less than the proposed project impacts, and less than significant with implementation of mitigation measures • Cumulative construction air quality impacts associated with the existing SDAB nonattainment status for O_3 would remain significant and unavoidable	• Landside construction air quality NO_X emissions would be similar to the proposed project impacts. • Cumulative construction air quality impacts associated with the existing SDAB nonattainment status for O_3 would remain significant and unavoidable	• Landside construction air quality NO_X emissions would be less than the proposed project impacts, but could remain significant and unavoidable • Cumulative construction air quality impacts associated with the existing SDAB nonattainment status for O_3 would remain significant and unavoidable

CAD = Confined Aquatic Disposal
CDF = Confined Disposal Facility
NO_X = oxides of nitrogen
O_3 = ozone
SDAB = San Diego Air Basin

5.10 ALTERNATIVE 3: CONVAIR LAGOON CONFINED DISPOSAL FACILITY ALTERNATIVE

5.10.1 Alternative Description

5.10.1.1 Introduction

The following section provides detailed environmental information on the Convair Lagoon Confined Disposal Facility Alternative (Convair Lagoon Alternative) for the Shipyard Sediment Site. The Convair Lagoon Alternative involves a Port Master Plan Amendment and the construction of a confined disposal facility (CDF) for the placement of contaminated marine sediment dredged from the Shipyard Sediment Site.

5.10.1.2 Location

The Convair Lagoon Alternative site consists of an approximately 15.4-acre water and land area located within the San Diego Bay in the city of San Diego, California. Figure 5-1 illustrates the regional location of the Convair Lagoon Alternative site. Figure 5-2 provides a more detailed map of the alternative's site location. The site is bounded by the San Diego Bay to the south; North Harbor Drive, a greenway and the San Diego International Airport to the north; the United States (U.S.) North Harbor Drive Coast Guard Facility to the east; and a rental car parking lot to the west (Figure 5-3). The site is within the jurisdiction of the San Diego Unified Port District (District) and is located in Planning District 2 (Harbor Island/Lindbergh Field), Planning Subarea 24 (East Basin Industrial) of the 2010 Port Master Plan.

5.10.1.3 Setting and Site

Physical Setting

The Convair Lagoon Alternative site is an area of the San Diego Bay that consists of open water, submerged facilities and land.

Land Facilities. Land facilities located on the Convair Lagoon Alternative site are illustrated in Figure 5-4. These facilities are located along the periphery of the site, with the exception of the southern boundary of the site which is San Diego Bay (see Figure 5-4). Land facilities include an asphalt paved area along the northern boundary of the site, parallel to North Harbor Drive; a concrete seawall or rip-rap located along the north, east and west shorelines; and an abandoned concrete sea plane marine ramp located along the southwesterly interface between the land and water. The western and northwestern part of the site is a large rental car parking lot.

Submerged Facilities. Submerged facilities located on the Convair Lagoon Alternative site are illustrated in Figure 5-4, and include a sand cap, rock berm and storm drains. The submerged area of the site includes an approximate seven-**acr**e sand cap that was designed to isolate sediment contamination associated with former Teledyne Ryan Aeronautical operations. In addition to the sand cap, submerged facilities on the site include a subsurface rock berm and multiple submerged storm drains. The subsurface rock berm transects the site from the northwest corner to the southeast corner in an "L" shape to contain the existing sand cap. On the northern shoreline, a 60-inch diameter storm drain, a 54-inch diameter storm drain, and two 30-inch diameter storm drains outlet into the lagoon. The two 30-inch diameter storm drains are abandoned in place and are no longer active. On the western shoreline, three smaller storm drains outlet into the lagoon.

Surrounding Areas. Areas surrounding the Convair Lagoon Alternative site are illustrated in Figure 5-3. The site is located within an urban area in the city of San Diego, California. Immediately north of the site is Harbor Drive and north of that is the San Diego International Airport. The San Diego International Airport covers 661 acres and consists of a single, 9,401 foot-long 200-foot wide east-west runway, two main terminals and a commuter terminal (SDCRAA, 2008). A greenway with a bicycle path is also located north and adjacent to the site, parallel to North Harbor Drive. Land directly west of the site is a rental car parking lot, while to the east of the site is the San Diego U.S. Coast Guard Station. The San Diego U.S. Coast Guard Station conducts Maritime Law Enforcement, Search and Rescue operations and escorts cruise and Navy ships entering and leaving the bay. The San Diego Bay and a boat anchorage area (Anchorage A-9) are located to the south of the site. Anchorage A-9 is a nine-acre water area which can accommodate approximately 30 transient craft anchored with a ground tackle, a device which prevents an anchored, waterborne vessel from moving.

Planning Setting

Port Master Plan. The Convair Lagoon Alternative site is located within Planning District 2 (Lindbergh Field/Harbor Island), Planning Subarea 24 (East Basin Industrial) of the Port Master Plan. Planning District 2 is one of the nine planning districts that are covered by the Port Master Plan (PMP) and encompasses approximately 996 acres, which consists of about 816 acres of tidelands and 180 acres of submerged tidelands. Planning Subarea 24, within Planning District 2, encompasses the entire Convair Lagoon Alternative site, as well as other land to the west of the site that is designated Industrial Business Park, and a bicycle path that extends along Harbor Drive. The PMP recommends the Industrial Business Park designated land for eventual redevelopment into a light, marine related industrial/business park land use that would allow such activities as scientific laboratories, office space, marine oriented businesses and light manufacturing plants, with some ancillary storage and warehousing where necessary.

The Convair Lagoon Alternative site, including potential staging areas, is approximately 15.4 acres in size. Within the PMP, approximately 5.0 acres of the eastern portion of the Convair Lagoon Alternative site is designated as Harbor Services (water), while the northern portion of the site (0.4 acres) is designated Harbor Services (land) The westerly portion of the water portion of the site (5.3 acres) is designated Specialized Berthing (water) (see Figure

5-5). A small portion of the site (1.3 acres), along the southeastern boundary, is designated as Boat Navigation Corridor (water) and the western and northwestern part of the site, including the staging area, (3.4 acres), is designated as Industrial Business Park (land).

Coastal Zone. The Convair Lagoon Alternative site falls entirely within the Coastal Zone, which is regulated by the California Coastal Commission under the California Coastal Act. Pursuant to the California Coastal Act, the California Coastal Commission has approved the PMP giving the District primary authority to regulate development and to issue Coastal Development Permits for development projects consistent with the Port Master Plan. However, some District issued permits can be appealed to the California Coastal Commission and the Commission must also approve any amendments to the Port Master Plan. Implementation of the Convair Lagoon Alternative would require a Coastal Development Permit but does not constitute an appealable project under the California Coastal Act.

5.10.1.4 Background

The surrounding shoreline of Convair Lagoon was previously shallow portions of the San Diego Bay which were filled with dredge sediment. The earliest information regarding dredging and fill operations in the vicinity of the alternative site is from 1921, when the northeastern shoreline of the bay was between present-day Pacific Highway and California Street (see Figure 5-1). In the 1920s and 1930s the area north of present-day West Laurel Street and North Harbor Drive, encompassing the eastern portion of the present-day San Diego Airport, was filled with material dredged from the bay. A dredging pipeline, (later converted to a 54-inch reinforced concrete storm drain), extended from the northern portion of the filled land, south to the bay, and discharged into the Convair Lagoon. In the mid-1930s dredging operations filled the area where the San Diego U.S. Coast Guard Station is located east and adjacent to this alternative site. By 1939, a concrete pier was constructed above the previously-mentioned storm drain on the site. In the early 1940s, dredging operations filled the area west of the site. Convair Lagoon is the unfilled area between the U.S. Coast Guard Station and the filled area to the west of the site. Throughout the years, multiple improvements to the site have been constructed and removed, including additional storm drains and other piers.

On October 17, 1986, the San Diego Regional Water Quality Control Board (San Diego Water Board) Executive Officer issued "*Cleanup and Abatement Order No. 86-92 for Teledyne Ryan Aeronautical near Lindbergh Field, San Diego County*" for the discharge of polychlorinated biphenyl (PCBs), several trace metals, and volatile organic compounds to the storm drains on Teledyne Ryan Aeronautical property and to the Convair Lagoon portion of the San Diego Bay. Cleanup and Abatement Order (CAO) 86-92, as amended, required Teledyne Ryan Aeronautical to construct a sand cap on the San Diego Bay bottom in Convair Lagoon to isolate the existing sediment contamination within the lagoon from the environment.

In 1996, the PCB contamination in Convair Lagoon was remediated by the Convair Lagoon Capping Project. During the PCB remediation, the existing sub-surface rock berm was constructed (Figure 5-4) and a sand cap was placed behind the rock berm. The sand cap consisted of fill material and still exists on the site. The majority of the existing sand cap is submerged, although construction of the cap converted approximately 1,400 square feet of an intertidal area to upland. The main cap consists of several layers of materials. The first layer is a geogrid which was placed on top of the existing sediment. The second layer consists of a minimum of one-foot of gravel on top of the geogrid. The third and last layer is a minimum of two feet of sand placed on top of the gravel. The geogrid provides separation between the existing sediments and the gravel. The gravel layer is provided to prevent animals from burrowing into contaminated sediment, while the sand layer isolates the contaminated sediment and provides habitat for plants and animals. The subsurface rock berm provides containment for the main cap and acts as a physical barrier limiting the effects of erosive currents and waves. The subsurface rock berm is approximately five feet in height with 3:1 (horizontal: vertical) sideslopes and is constructed of rock riprap. The thin cap is used to transition between the main cap and the existing topography. The thickness of the thin cap at the PCB contamination boundary is equal to the thickness of the main cap and tapers shoreward to a thickness of four inches of sand over four inches of gravel on the existing sediment. The outer cap is outside the subsurface rock berm and consists of three feet of sand placed directly on top of existing sediment for a distance of 80 feet from the toe of the subsurface rock berm. Beyond 80 feet, the outer cap tapers off at a rate of natural repose of sand.

Recent bay deposits underlie the sand cap and PCB contaminated sediment. Bay deposit materials typically consist of interlayered dark gray, wet, loose, fine silty sand and silt and soft, sandy clay. Old paralic deposits underlie the bay deposits and typically consist of medium dense sand and stiff clay.

Subsequent to installation of the sand cap over the PCB contaminated sediments in Convair Lagoon, monitoring has been conducted that has discovered PCB contamination above the cap, presumably coming from the 60-inch storm drain. In response to this discovery, the San Diego Water Board issued CAO R9-2004-0258, as amended, which addresses the cleanup and abatement of wastes discharged to land at the former TDY site. According to the CAO, significant wastes discharged to soil and groundwater at the site must be identified and cleaned up, and the discharge of any wastes to Convair Lagoon and San Diego Bay must be abated. A subsequent enforcement order will be necessary to assess and cleanup wastes discharged from landside sources to the marine sediments in Convair Lagoon and San Diego Bay. The CAO states that soil and groundwater must be cleaned up and waste discharges abated prior to conducting remedial actions in Convair Lagoon and San Diego Bay to prevent potential recontamination of the marine sediments in the bay. Therefore, the Convair Lagoon Alternative would commence construction once the PCB source is eliminated.

5.10.1.5 Project Alternative Description

The following discussion describes the three major features of the Convair Lagoon Alternative: 1) Port Master Plan Amendment, 2) construction activities, and 3) post-construction operation.

Port Master Plan Amendment

Of the entire 15.4 acre site, only the 10 acre proposed fill pad area (see Figure 5-4) would be subject to the proposed Port Master Plan Amendment (PMPA) because these lands would undergo a conversion from water to land. Under the proposed PMPA, all existing water areas of the 10-acre PMPA site would be designated as Harbor Services, as illustrated in Figure 5-6, and converted to land. The Harbor Services use category identifies land and water areas devoted to maritime services and harbor regulatory activities of the District, including remediation and monitoring. As illustrated in Figure 5-5**,** water areas on the existing site are designated as Harbor Services (land and water), Industrial Specialized Berthing (water), and Boat Navigation Corridor (water) under the 2010 Port Master Plan. The proposed water use changes and related acreages that would occur with approval of the Convair Lagoon Alternative PMPA are summarized in Table 5-3. Minor textual changes in the PMP would also be included in the PMPA to ensure consistency within the document. The proposed PMPA is evaluated in detail in Section 5.10.10, Land/Water Use Compatibility.

Table 5-3: Port Master Plan Amendment Land Use Acreage Changes for Convair Lagoon Alternative

Land Use Designation	Existing (acres)	Proposed (acres)	Net Change
Harbor Services (water)	**5**	**0**	**-5.0 acres**
Harbor Services (land)	**0**	**10**	**+10 acres**
Boat Navigation Corridor	**0.5**	**0**	**-0.5 acre**
Industrial Specialized Berthing	**4.5**	**0**	**-4.5**

Construction Activities

The description provided below is conceptual in nature and although design details may change, the overall concept, truck loads and construction methods would occur as described below. In addition, the conceptual design is consistent with the specifications provided in the Naval Facilities Engineering Command, DM-7.2, Foundations and Earth Structures, dated September 1986. Construction of the Convair Lagoon Alternative is estimated to occur for a duration of approximately 15 months with the activities divided into five phases: 1) Site Preparation, 2) Containment Barrier Construction, 3) Storm Drain Outlet Extension, 4) Sediment Transport and Placement, and 5) Containment Cap Installation. The phasing of construction activities may vary somewhat depending on various factors, such as permitting limitations and availability of dredge fill materials. Each of the five construction phases is described in detail below with material volumes for each phase is shown in Table 5-4. Table 5-5 provides a summary of the total material volume capacity available on site, upon completion of the Convair Lagoon Alternative.

As shown in Table 5-4, all five phases of construction would require 7,714 truck trips and 116 barge trips. The maximum daily truck trips that would occur during construction would be 98 truck trips per day. The average holding capacity of trucks used for the importation and exportation of materials would be approximately 12.22 cubic yards (cy), while the average holding capacity of barges used for the importation and exportation of materials would be approximately 1,250 cy. Construction staging areas are shown in Figure 5-4 and would be located on the rental car parking lot in the western part of the site. During each construction phase, the Convair Lagoon Alternative would employ approximately ten construction workers. A maximum of A short-term monitoring program would occur during all phases of construction to monitor if disturbed sediments are adequately contained and to determine that construction is occurring according to specifications.

Table 5-4: Convair Lagoon Alternative Material Volumes (by Construction Phase)

Construction Phase	Material Volume (in cubic yards)
Phase 1, Site Preparation	
Demolition	500 cy
Excavation Underneath Jetty	13,000 cy
Phase 1 Subtotal	13,500 cy
Phase 2, Containment Barrier Construction	
Jetty Aggregate Material and Placement	38,000 cy
Jetty Underlayer Material and Placement	3,000 cy
Jetty Armored Rock Material and Placement	8,000 cy
Filter Rock Material	2,000 cy
Phase 2 Subtotal	51,000 cy
Phase 3, Storm Drain Outlet Extension	
2 Storm Drain Extension Rock Barrier	2,200 cy
2 Storm Drain Energy Dissipaters	300 cy
Phase 3 Subtotal	2,500 cy
Phase 4, Sediment Transport and Placement	
Dredge from Shipyard Sediment Site	143,400 cy
Disposal to Class I landfill (Kettleman Hills)	24,737 cy
Placement in Convair Lagoon Alternative Site	121,890 cy
Phase 4 Subtotal	24,737 cy to Kettleman Hills Landfill 121,890 cy to Convair Lagoon Alternative Site
Phase 5, Containment Cap Installation	
9 inch Sand Cap	12,000 cy
3 inch Asphalt Pavement	4,000 cy
Phase 5 Subtotal	16,000 cy
Total Material Volume Placed in Convair Lagoon Alternative Site – (includes all construction materials and contaminated sediment)	**204,890 cy**

Table 5-5: Convair Lagoon Alternative Site Capacity Summary

Convair Lagoon Alternative Site	Material Volume
Capacity Available Upon Completion of Construction	240,000 cy
Total Material Volume proposed under Convair Lagoon Alternative (includes all construction materials and contaminated sediment)	204,890 cy
Unused Capacity	35,110 cy

Note: Sediment shrinkage and bottom consolidation are accounted for in determining the CDF capacity.

Table 5-6: Convair Lagoon Alternative Truck and Barge Trips (by Construction Phase)

Construction Phase	Truck Trips	Barge Trips
Phase 1, Site Preparation	0	0
Phase 2, Containment Barrier Construction	4,174	0
Phase 3, Storm Drain Outlet Extension	205	0
Phase 4, Sediment Transport and Placement		
Sub-Phase A: Dredging and Capping Shipyard Sediment Site	0	0
Sub-Phase B: Dewatering and Disposal	2,025	18
Sub-Phase C: Transportation and Placement	0	98
Phase 5, Containment Cap Installation.	1,310	0
Total (All Phases)	**7,714 truck trips**	**116 barge trips**

Phase 1, Site Preparation. Phase 1 of the construction would involve initial site preparation activities. This phase of construction would include the demolition and removal of the existing concrete pier, riprap, concrete mattress storm drain energy dissipaters, and the abandoned seaplane marine ramp. Removal of the pier would involve cutting the existing support piles at the approximate existing mud-level. The existing sub surface rock berm would remain undisturbed. In total, approximately 500 cubic yards (cy) of materials would be demolished. Demolished facilities would be reused on site as fill material.

In addition to demolition activities, the site would require the excavation of existing sediment in the area proposed for the containment barrier (Phase 2). To prepare the site for construction of the containment barrier, approximately three feet of existing sediment (13,000 cy) would be excavated within the footprint of the proposed barrier, consistent with the specifications provided in the Naval Facilities Engineering Command, DM-7.2, Foundations and Earth Structures, dated September 1986. This excavated material would be stockpiled on the adjacent rental car parking lot and then, after the containment barrier is constructed it would be reused as fill material in shallow water portions of the site.

Phase 1 construction activities would require no truck trips because all excavated and demolished materials would be reused on site as fill. Construction equipment required for Phase 1 construction would include tracked excavators (i.e., Caterpillar 350) with breaker hammers with a 10,000 pound (lb) capacity, loaders (i.e., Caterpillar 980), dredging equipment, hydraulic pumps, and a clamshell crane. Construction activities would be conducted from the existing shoreline or from a barge with a crane.

Phase 2, Containment Barrier Construction. Phase 2 construction activities would involve the installation of a rock jetty containment barrier from the southwest corner of the San Diego U.S. Coast Guard facility shoreline to the southeast corner of the rental car lot shoreline as shown in Figure 5-4. The containment barrier would serve to contain the dredged fill material from the Shipyard Sediment Site and mitigate the migration of contaminated fill material into the bay. The barrier would extend an estimated 1,100 feet from the southwest corner of the site to the southeast corner of the site. The containment barrier would be constructed prior to the placement of the dredged fill (Phase 4) and would be designed to resist marine and earth forces. The containment barrier would be constructed with a 2:1 (horizontal: vertical) slope gradient.

The containment barrier would consist of three layers (core, underlayer and armor) placed upon the Phase 1 excavated surface below the marine floor (Figure 5-7). The core layer of the containment barrier would consist of quarry-run aggregate or similar material. The underlayer would consist of small rock and would support the armor layer. The armor rock layer would be located on the bay-side of the barrier to protect the outside of the containment barrier from wave action, boat wakes and other erosional forces. The containment barrier would include an engineered filter on the north face, consisting of graded rock or geotextile fabric. This filter would mitigate migration of fill particles into the bay due to tidal fluctuations. The filter would be approximately 7,000 square yards and would be anchored to the containment barrier with 2,000 cy of rock. A weir would be constructed on or near the containment barrier to provide a method to release site water displaced during the placement of fill at the site. The weir would consist of a low crest in the containment barrier or a pipe in the structural fill of the barrier. The weir would employ a method for sediment management, such as a turbidity curtain.

Rock and aggregate material used to construct the containment barrier would be imported from a nearby quarry. Multiple rock sizes would be imported for the armor and underlayer materials of the containment barrier. Armor rock size would be approximately three feet in size with a weight of approximately two-tons per rock; underlayer rock would be sized in proportion with the armor face rock; and the core layer would consist of import quarry-run or similar aggregate material. In total, the containment barrier would require approximately 49,000 cy of materials, including 8,000 cy of armor rock material, 3,000 cy of underlayer rock material, and 38,000 cy of core aggregate material.

The importation of containment barrier materials would require approximately 4,174 truck trips, using a 12.22 cy, ten-wheeled dump truck. Construction equipment required for the construction of the containment barrier would include dump trucks, barges, front loaders, hydraulic pumps and clamshell cranes.

Construction of the containment barrier would either occur by a placement or end dumping method. Placement construction would occur from a crane located on land adjacent to the site or from a crane located at the crest of the containment barrier. Under the placement method, armor rock layers would require individual rock placement, using a crane mounted on a barge, to promote stress distribution and uniform coverage. The placement of core rock may include bottom dumping. Alternatively, the containment barrier could be constructed using an end dumping method. End dumping would involve pushing or dumping rock materials from the western rental car lot shoreline to progressively build the containment barrier eastward without the use of a barge or crane. The end dumping construction method would require individual rock placement for armor rock. Upon completion of construction, the containment barrier would have an elevation of 12 Mean Lower Low Water (MLLW), and would have a total fill capacity of 168,000 cy.

Phase 3, Storm Drain Outlet Extension. Phase 3 of construction activities would involve the extension of the existing 60-inch diameter storm drain and the extension of the existing 54-inch diameter storm drain to the face of the containment barrier, as shown in Figure 5-4. The two 30-inch diameter storm drains that currently exist on site would not be extended because they have been abandoned and no longer discharge storm water. Storm drain extensions would require the installation of rock for support. A total of 2,200 cy of rock material would be imported for the storm drain extensions and placed using an end dumping construction method. Material would be dumped from the same trucks used to import the material. Each extended storm drain would be installed with an energy dissipater apron at the mouth of the each storm drain. Energy dissipaters would be constructed at or near the high water mark to allow for storm water discharge at high tide. Material for the new energy dissipaters would include various rock material sizes (similar to those used for the containment barrier), as well as a geotextile fabric or graded rock filter medium. Each energy dissipater would require approximately 150 cy of imported rock. Imported rock materials for the storm drain extensions and energy dissipaters would be transported by truck and would require approximately 205 truck trips. The extension of storm drains and construction of energy dissipaters would require earthwork or marine machinery, including cranes and an excavator.

Phase 4, Sediment Transport and Placement. Phase 4 of construction activities would involve three sub-phases: A) dredging and capping the Shipyard Sediment Site, B) dewatering and disposing of highly contaminated sediment, and C) transporting and placing remaining dredged sediment in the Convair Lagoon Alternative site. These sub-phases are discussed separately below.

A. Dredging and Capping Shipyard Sediment Site. Sub-phase A of Phase 4 of the Convair Lagoon Alternative includes the dredging and removal of approximately 143,400 cubic yards of contaminated sediment from the Shipyard Sediment Site. The Shipyard Sediment Site is located along the eastern shore of central San Diego Bay, extending approximately from the Sampson Street Extension on the northwest to Chollas Creek on the southeast, and from the shoreline out to the San Diego Bay main shipping channel to the west, as shown in Figure 3-1 of Chapter 3, Project Description, of this EIR. The Shipyard Sediment Site consists of marine sediments in the bottom bay waters that contain elevated levels of pollutants greater than San Diego Bay background conditions. This alternative would utilize environmental dredging which, unlike navigational or construction dredging, is performed specifically for the removal of contaminated sediment while minimizing the spread of contaminants to the surrounding environment during dredging operations.

Silt curtains and/or air curtains would be placed around the dredge area, including the dredge barges. The silt curtain would consist of a geotextiles fabric curtain with a floatation boom at the upper hem and ballast weights at the lower hem. The silt curtain would act as a physical barrier that would limit access to the portions of the site where the dredging operations are occurring. The silt curtain would also contain any resuspended particles from migrating outside of the active dredging area. Air curtains have been used successfully during the removal operations on the St. Lawrence River in Massena, NY, and the KK River in Milwaukee, Wisconsin. These air curtains were used in conjunction with silt curtains to contain re-suspended sediment but specifically to enhance worker safety and allow barges to transit into and out of the work area without the need to open and close silt curtain gates.

It is anticipated that the dredging would utilize a derrick barge equipped with a closed environmental bucket such as the Cable Arm® Environmental Clamshell in order to maintain water quality. The dredge material would be placed on material barges. All barges would be outfitted with a water recovery system to collect the water deposited on the barges during dredging operations.

Due to the presence of infrastructure, such as piers and pilings, dredging is constrained in several locations within the Shipyard Sediment Site. Therefore, contaminated areas under piers and pilings at the Shipyard Sediment Site would be remedied through subaqueous, or in-situ, capping. In-situ capping is the placement of clean material on top of the contaminated sediment. The capping material is typically clean sand, silty to gravelly sand, and/or armoring material. Effective capping requires sufficient cap thickness, careful cap placement to avoid disturbance, and maintenance to ensure cap integrity from future disturbances. Sand capping would involve the transport of capping material to the site (possibly via truck or barge) and placement of the materials over contaminated sediment. The capping operations will require a materials barge outfitted with a stone slinger truck, hoppers, and conveyors to move and place the capping materials over the contaminated marine sediments.

B. Dewatering and Disposal. Under the Convair Lagoon Alternative, approximately 21,510 cy, or 15 percent, of dredged sediment from the Shipyard Sediment Site would not qualify for placement in the Convair Lagoon Alternative CDF because of high contamination levels.

This 21,510 cy of contaminated dredged sediment would be transported to land via barge and would require dewatering and transportation to a Class I landfill.

For this 21,510 cy, or 15 percent, of dredged sediment, the Convair Lagoon Alternative would require a landside sediment management site with sufficient space and access to stockpile, dewater, and transport the 21,510 cy of dredged material. Five potential staging areas have been identified and are shown in Figures 3-2 through 3-7 in Chapter 3, Project Description, of this EIR. Approximately 18 barge trips would be required to transport the 21,510 cy of dredged material to land. The 21,510 cy of dredge sediment would be off-loaded from the materials barge by an excavator and put into dump trucks for placement in a staging area or treated with cement-based reagent (pozzilonics) in the barge, then off-loaded into trucks for placement in a staging area for curing and sampling.

The staging area would require site preparation and construction of a pad. The site would be graded and compacted (if necessary) and a sealing liner would be put in place. An asphalt pad would then be constructed. The drying area would be surrounded by k-rails and sealed with foam and impervious fabric to form a confined area. The sediment would then be mixed with pozzilonics to accelerate the drying. Treatment with pozzilonics would increase the 21,510 cy of material by 15 percent, to approximately 24,737 cy. The sediment would be spread out and rotated frequently to further accelerate the drying process. The drains located in the drying area would be isolated from the rest of the storm water system at the site. If the excess water from the drying area does not meet industrial wastewater permit requirements, and cannot be discharged into the City sewage system, the water would be dealt with as contaminated waste and removed from the site by a licensed waste hauler. All collected water would be tested and disposed of in accordance with local, state, and federal requirements. After drying, soil sampling would be conducted and the 24,737 cy of material would be loaded directly onto trucks for disposal at a Class I disposal facility, most likely Kettleman Hills Landfill in Kings County, California. It is estimated that approximately 2,025 truck trips would be required to transport this sediment to the Kettleman Hills Landfill. The preferred route to Kettleman Hills Landfill in Kings County, California is via I-5 north. Trucks departing from potential Staging Areas 1 through 4 would access I-5 south via E. Harbor Drive and 28th Street; trucks departing from Staging Area 5 would access I-5 south either directly from Bay Marina Drive or from W. 32nd Street to Marina Way to Bay Marina Drive.

C. Transportation and Placement. Approximately 85 percent of the dredged material, or 121,890 cy, from the Shipyard Sediment Site would be transported by barge to the Convair Lagoon Alternative Site and placed within the submerged areas of the lagoon as hydraulic fill. The contaminated marine sediment would be transported via a barge towed by a tug boat from the Shipyard Sediment Site to the Convair Lagoon Alternative site over a distance of approximately 5 miles that would require 98 barge trips. Barges used to receive the contaminated sediment at the Shipyard Sediment Site would transport the dredged material to the Convair Lagoon Alternative site. The contaminated sediment would be transferred from the barges to the CDF through the use of pumps, pipelines and hoses or a clamshell crane.

Erosion control measures would be implemented to protect the placed sediment from wave action, boat wakes and other erosional forces. After all the contaminated sediment is placed within the containment barrier, the elevation of the site would be approximately nine feet above sea level or MLLW.

Phase 5, Containment Cap Installation. Phase 5 of the construction would involve the importation and installation of an engineered containment cap. The engineered cap would consist of 9 inches of clean sand placed over the contaminated fill material and a 3-inch layer of asphalt pavement above the clean sand to isolate the contaminated material from the community. Cap material is anticipated to be transported and placed conventionally by truck and earthwork equipment. During this phase of construction, approximately 12,000 cy of sand and 4,000 cy of asphalt would be imported to the site and placed above the contaminated sediment by unloading the sand and asphalt directly from the trucks. The importation of sand and asphalt would require approximately 1,310 truck trips, using 12.22 cy, ten-wheeled dump trucks. Construction equipment required for Phase 5 would include trucks, a grader and asphalt spreading and compacting equipment. Upon completion of the containment cap, the elevation of the site would be 10 feet MLLW and a portion of the dredge fill would remain saturated beneath sea level. The elevation transition between the existing, surrounding ground surface, which is 12 feet MLLW, would be gradual across the site and would be based on surface drainage requirements. Four storm drains would remain on site (Figure 5-4), two abandoned in-place and two discharging beyond the containment barrier, each equipped with an energy dissipater apron.

Post-Construction Operation

Upon completion of construction, the alternative would create approximately 10 acres of upland that would consist of paved, undeveloped land with an elevation of approximately 10 feet above sea level or MLLW. Additionally, the site would be designated Harbor Services (land) in the Port Master Plan. Harbor Services is a use category that identifies land and water areas devoted to maritime services and harbor regulatory activities of the District, including remediation and monitoring.

The Convair Lagoon Alternative does not include the construction or development of any buildings or structures on the converted site and no permanent dewatering would be required.

5.10.1.6 Permits and Approvals Required

Numerous federal, state and local laws, regulations and permit requirements would be applicable to the Convair Lagoon Alternative. Table 5-7 identifies potential permits and approvals that would be required for the Convair Lagoon Alternative.

Table 5-7: Potential Permits

Agency/Department	Permit	Action Associated With or Required For
Federal Agencies		
US Army Corps of Engineers	Individual/Nationwide section 404 Permit (CWA, 33 USC 1341)	Responsible for issuing section 404 permits for dredged or fill material into waters of the US (up to higher high water line in tidal waters) and into wetlands in compliance with EPA regulations.
	Section 10, Rivers and Harbors Act Permit	Regulates construction, excavation, and deposition in navigable waters (up to mean high water in tidal waters).
	Marine Protection, Research, and Sanctuaries Act of 1972, section 103	Regulates dumping and transport for dumping of material into US waters.
State Agencies		
State Water Resources Control Board, Regional Water Quality Control Board	401 Certification (CWA, 33 USC 1341, if the project requires ACOE 404 Permit)	Discharge into waters and wetlands (see ACOE section 404 Permit).
California Coastal Commission	Port Master Plan Amendment	Change in designated land use.
Local Agencies		
San Diego Unified Port District	Port Master Plan Amendment	Change in designated land use.
	Coastal Development Permit	Development within the Coastal Zone.

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Figure 5-1: Regional Location

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Figure 5-2: Site Vicinity

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Figure 5-3: Site Location

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Figure 5-4: Conceptual Design Existing and Proposed Facilities

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Figure 5-5: Port Master Plan Land and Water Use Map

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Figure 5-6: Port Master Plan Amendment

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Figure 5-7: Containment Barrier Cross Section

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5.10.2 Environmental Analysis Introduction

5.10.2.1 Introduction to the Analysis

Sections 5.10.3 through 5.10.10 of Chapter 5.10 contain a discussion of the potential significant environmental effects resulting from implementation of the Convair Lagoon Alternative, including information related to existing site conditions, analyses of the type and magnitude of individual environmental impacts, and feasible mitigation measures that could reduce or avoid environmental impacts.

Scope of the Analysis

Implementation of the Convair Lagoon Alternative could result in potentially significant impacts to the following environmental topics:

- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land and Water Use Compatibility

The Convair Lagoon Alternative would have either a less than significant impact or no impact associated with the following topics: Aesthetics, Agricultural and Forestry Resources, Mineral Resources, Population and Housing, Public Services, Recreation, Transportation and Traffic and Utilities and Service Systems. These topics are described within Chapter 5.10.11, Other Environmental Issues, of this alternative analysis.

5.10.2.2 Format of the Environmental Analysis

Each of the eight environmental topic sections in Chapter 5.10 includes the following subsections:

Existing Environmental Setting. According to CEQA Guidelines section 15125, an EIR must include a description of the existing physical environmental conditions in the vicinity of a project to provide the “baseline condition” against which impacts are compared. Normally, the baseline condition is the physical condition that exists when the NOP is published. The NOP for the Shipyard Sediment Site Project was published on November 11, 2009.

Regulatory Setting. This subsection provides a summary of regulations, plans, policies, and laws that are relevant to each environmental topic at the federal, state, and local levels.

Methodology. This subsection provides a summary of the methods that were used to evaluate the potential impacts occurring as a result of the Convair Lagoon Alternative.

Thresholds of Significance. Thresholds of significance are criteria used to assess whether potential environmental effects are significant. The thresholds of significance used in this analysis are primarily based upon the recommendations provided in Appendix G of the CEQA Guidelines. The threshold of significance defines the type, amount, and/or extent of impact that would be considered a significant adverse change in the environment. The thresholds of significance are intended to assist the reader in understanding how and why an EIR reaches a conclusion that an impact is significant or less than significant.

Impacts and Mitigation Measures. This subsection describes the potential environmental impacts of the Convair Lagoon Alternative and, based upon the thresholds of significance, concludes whether the environmental impacts would be considered less than significant, potentially significant or significant and unavoidable. The discussion of potential impacts is based upon the applicable threshold of significance for each issue. Where impacts are identified, mitigation measures are included to avoid or reduce the potential impact to a level below significance.

The analysis of environmental impacts considers both the construction and operational aspects associated with implementation of the Convair Lagoon Alternative. As required by CEQA Guidelines section 15126.2(a), direct, indirect, short-term, extended-term, on-site and/or off-site impacts are addressed, as appropriate, for the environmental issue being analyzed.

Less than Significant. This term is used to refer to 1) impacts resulting from implementation of the Convair Lagoon Alternative that are not likely to exceed the defined threshold of significance, and 2) potentially significant impacts that are reduced to a level that does not exceed the defined threshold of significance after implementation of mitigation measures.

Potentially Significant. This term is used to refer to impacts resulting from implementation of the Convair Lagoon Alternative that exceed the defined threshold of significance before identification of mitigation measures. A “significant effect” is defined by CEQA Guidelines section 15382 as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment [but] may be considered in determining whether the physical change is significant.” For impacts that exceed a threshold of significance, mitigation measures that avoid or reduce the potential impact are identified.

Mitigation Measures. CEQA Guidelines section 15126.4 requires an EIR to "describe feasible measures which could minimize significant adverse impacts." The CEQA Guidelines define feasibility as capable of being accomplished in a successful manner within a reasonable period of time taking into account economic, legal, social, technological, or other considerations. This subsection lists the mitigation measures that could reduce the severity of impacts identified in the Impact Analysis subsection. Mitigation measures are the specific environmental requirements for construction or operation of the Convair Lagoon Alternative consistent with the findings of this analysis.

Cumulative Impacts. CEQA Guidelines section 15130 requires that an EIR address cumulative impacts of a project when the project's incremental effect would be cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project would be considerable when viewed in connection with the effects of past, current, or probable future projects. A cumulative effect is not deemed considerable if the effect would be essentially the same whether the Proposed Project is implemented or not.

The basis for the analysis of cumulative impacts is dependent on the nature of the issue. According to CEQA Guidelines section 15130, the discussion of cumulative effects "need not provide as great a detail as is provided for the affects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness." The evaluation of cumulative impacts will be based on "a list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside of the control of the agency." Present and probable future projects are addressed in this cumulative analysis, while past projects were considered as part of the existing setting and analyzed under each individual topic in Chapter 5.10. This analysis includes projects that require agency approval for an application that has been received by the reviewing agency at the time of the Draft EIR, but does not include information that became known or available after the completion of the Draft EIR.

In addition, reasonable mitigation measures for cumulatively significant impacts should be discussed; however, CEQA acknowledges, "with some projects, the only feasible mitigation for cumulative impacts may involve the adoption of ordinances or regulations rather than the imposition of conditions on a project-by-project basis."

Table 5-8 provides of a list of the past, present, and probable future projects within the vicinity of the Convair Lagoon Alternative known as of April 2011, which is the time of preparation of this analysis. Cumulative projects that are considered within the vicinity of the Convair Lagoon Alternative include those located in areas under the jurisdiction of the San Diego Unified Port District or the San Diego Regional Airport Authority, or in areas within a one-mile radius of the Convair Lagoon site.

Significant and Unavoidable. This term is used to refer to significant impacts resulting from implementation of the Convair Lagoon Alternative that cannot be eliminated or reduced to below significance through implementation of feasible mitigation measures.

Table 5-8: Cumulative Projects in the Vicinity of Convair Lagoon Alternative

ID #	Project Name	Location	Description	Schedule
1.	West Side - Terminal Project 1	San Diego International Airport (Lindbergh Field)	Expand existing Terminal 2 West with 10 new gates.	Construction timeline begins 2009 and ends 2013.
2.	West Side - Airfield Project 2	San Diego International Airport (Lindbergh Field)	Construct new aircraft parking and replacement Remain-Over-Night aircraft parking apron.	Construction timeline begins 2009 and ends 2013.
3.	West Side - Airfield Project 3	San Diego International Airport (Lindbergh Field)	Construct new apron and aircraft taxi lane.	Construction timeline begins 2009 and ends 2013.
4.	West Side - Ground Transportation Project 4	San Diego International Airport (Lindbergh Field)	Construct new second level road/curb and vehicle circulation.	Construction timeline begins 2009 and ends 2013.
5.	West Side - Ground Transportation Project 5	San Diego International Airport (Lindbergh Field)	Construct a new parking structure and vehicle circulation serving Terminal 2.	Construction timeline begins 2009 and ends 2013.
6.	West Side - Airport Facilities Project 6	San Diego International Airport (Lindbergh Field)	Utility Plan Expansion and Co-Generation Facility.	Construction timeline begins 2009 and ends 2013.
7.	West Side - Airport Facilities Project 7	San Diego International Airport (Lindbergh Field)	1,000 foot Displaced Threshold.	Construction timeline begins 2009 and ends 2013.
8.	North Side - Ground Transportation Project 1	San Diego International Airport (Lindbergh Field)	Relocate and reconfigure SAN Park Pacific Highway.	Construction timeline begins 2009 and ends 2013.
9.	North Side - Ground Transportation Project 2	San Diego International Airport (Lindbergh Field)	Construct a new access road to North Area facilities from Sassafras St./Pacific Highway intersection.	Construction timeline begins 2009 and ends 2013.
10.	North Side - Airport Support Project 3	San Diego International Airport (Lindbergh Field)	Construct new general aviation facilities including access, terminal hangers and apron on 12.4 acres.	Construction timeline begins 2009 and ends 2013.
11.	North Side - Ground Transportation Project 4	San Diego International Airport (Lindbergh Field)	Demolish the existing general aviation facilities	Construction timeline begins 2009 and ends 2013.
12.	North Side - Airfield Project 5	San Diego International Airport (Lindbergh Field)	Reconstruct Taxiway C and construct new apron hold pads and new Taxiway east of Taxiway D.	Construction timeline begins 2009 and ends 2013.
13.	Teledyne Ryan Demolition Project	2701 North Harbor Drive, adjacent to the San Diego International Airport	Removal of approximately 50 existing structures (totaling approximately one million square feet); removal and disposal of all paving materials, hazardous and contaminated demolition materials,	Expected completion date June 2012.

Table 5-8: Cumulative Projects in the Vicinity of Convair Lagoon Alternative

ID #	Project Name	Location	Description	Schedule
			chlorofluorocarbons; removal, replacement or relocation of underground piping and utility systems; capping storm drain and sanitary sewer laterals.	
14.	Thomas Jefferson School of Law	South side of Island Avenue between 11th Avenue and Park Boulevard	175,000 square foot law school.	Expected completion date January 2011.
15.	Commercial Fisheries Revitalization Plan	The two commercial fishing facilities on San Diego Bay: Driscoll's Wharf in America's Cup Harbor in the north bay and Tuna Harbor, at G Street Mole near downtown San Diego.	Comprehensive Plan that addresses how San Diego can support and increase commercial fishing.	Finalized in 2010.
16.	Sunroad Harbor Island Hotel	955 Harbor Island Drive, Harbor Island	The hotel, totalling approximately 117,000 square feet, would consist of up to 175 rooms, limited meeting space, common areas, and surface parking. The project would also include removal of the existing traffic circle and realignment of the road and lease lines.	Application pending. Completion date unknown.
17.	Marina Green Project	America's Cup Harbor in Shelter Island	Three buildings, a 50-slip marina, a 16,000-square foot park and a new shoreline promenade.	In progress. Completion date unknown.
18.	Lane Field Project	North side of Broadway, between North Harbor Drive and Pacific Highway	Two hotels (totaling 800 rooms), a hostel, parking facilities and retail uses on a 5.8-acre parcel formerly used as a parking lot.	Construction expected to begin in early 2013 and end in mid-2015.
19.	Main Library	Block bounded by 11th Avenue, K Street, Park Boulevard, and J Street	366,000 square foot library.	Construction schedule is unknown.
20.	North Embarcadero Port Master Plan Amendment	Area bordered by Market Street on the south, Laurel Street to the north, the railroad right of way to the east and the San Diego Bulkhead line (the bayward edge of land) to the west	The project includes amending the Port Master Plan for the North Embarcadero area to incorporate planning designation and a variety of use changes.	Construction expected to begin mid-2013 and end in mid-2018.
21.	North Embarcadero Visionary Plan Phase 1 Project	Area bordered by Market Street on the south, Laurel Street to the north, the railroad right of way to the east and the San Diego Bulkhead line (the bayward edge of land) to the west	Landscape and traffic improvements to West Broadway; Realign North Harbor Drive from B Street Pier to Navy Pier; Broadway Pier design enhancements; and Development of a public park/plaza on the Lane Field Development project site.	Undergoing project approval process and obtaining permits.
22.	Old Police Headquarters	Southeast corner of Harbor Drive and Pacific	Rehabilitation and adaptive reuse of historically designated Old Police	Construction expected to begin in early 2012

Table 5-8: Cumulative Projects in the Vicinity of Convair Lagoon Alternative

ID #	Project Name	Location	Description	Schedule
		Highway	Headquarters building with a mix of specialty retail, entertainment, and restaurant uses; reconfiguration with surrounding parking areas; and pedestrian access, plaza, and landscape improvements.	and end in mid 2013.
23.	Port Pavilion on Broadway Pier	Broadway Pier, intersection of North Harbor Drive and West Broadway	52,000 square foot cruise ship terminal at Broadway Pier.	Construction completed.
24.	San Diego Convention Center Phase III Expansion and Expansion Hotel Project	111 West Harbor Drive	Phase III Expansion includes: a two-story structure with varying heights up to 95 feet above grade adjacent to and southwesterly of the current facility including approximately 225,000 square feet of exhibit halls, 101,500 square feet of meeting rooms, 80,000 square feet of ballroom, 16,000 square feet of kitchen, an additional 22 truck docks, additional supporting circulation and pre-functional space, and up to 45,000 square feet of visitor-serving retail; a 35-foot wide pedestrian promenade immediately adjacent to the water's edge; a public street known as Convention Way immediately adjacent to, and inland of, the promenade; a pedestrian thoroughfare immediately adjacent to, and inland of, Convention Way; creation of approximately 5 acres of accessible public space for active and passive public use; a pedestrian bridge over Harbor Drive and rail rights-of-way connecting the existing Convention Center to downtown in the vicinity of Fourth Avenue; a Water Transportation Center, including a ticket booth, offices, public restrooms, bus drop-off, and parking. Expansion Hotel includes a podium and tower structure up to 400 ft above mean sea level containing between 250 to 500 guest rooms along with up to 50,000 square feet of banquet/conference rooms, ballrooms, restaurants, and retail shops.	Construction expected to begin in early 2013 and end in mid 2015.
25.	Ruocco Park	Area located along the waterfront west of Pacific Hwy and south of Harbor Drive and on portions of the Harbor Seafood Mart site	3.3 acres of public park/plaza areas, with landscape and aesthetic improvements such as a water feature, lawns, benches, enhanced paving, varieties of plant materials, and an outdoor sculpture. Project requires demolition of portions of the existing Harbor Seafood Mart building and reconfiguration of parking areas.	Construction is planned to begin in Spring 2011.

Table 5-8: Cumulative Projects in the Vicinity of Convair Lagoon Alternative

ID #	Project Name	Location	Description	Schedule
26.	San Diego Marriott Hotel & Marina Spa	333 West Harbor Drive	The San Diego Marriott Hotel & Marina proposes to convert a previous ground-level restaurant (formerly LC's Restaurant) into a full-service spa facility which would be utilized primarily by hotel guests.	Construction is expected to begin in mid-2012 and end in late-2012.
27.	United States Federal Courthouse	South side of Broadway between Union Street and State Street	426,000 square foot courthouse.	Construction began in May 2009 and is expected to be completed in December 2011.

Sources: SDCRAA, 2008; SDCRAA, 2009; District, 2011b

5.10.3 Air Quality

This section evaluates the potential for air quality impacts to occur from implementation of the Convair Lagoon Alternative. Potential impacts addressed in this section include consistency with applicable plans, violations of air quality standards, impacts to sensitive receptors, and objectionable odors. This section incorporates information and analyses provided in the *Air Quality Technical Report for the Shipyard Sediment Site Project Convair Lagoon Alternative,* authored by Atkins in May 2011. This report is provided as Appendix I of this EIR.

5.10.3.1 Existing Environmental Setting

Climate

Regional climate and local meteorological conditions influence ambient air quality. Convair Lagoon is located in the San Diego Air Basin (SDAB). The climate of the SDAB is dominated by a semi-permanent high pressure cell located over the Pacific Ocean. This cell influences the direction of prevailing winds (westerly to northwesterly) and maintains clear skies for much of the year. It also drives the dominant onshore circulation and helps create two types of temperature inversions, subsidence and radiation, that contribute to local air quality degradation.

Subsidence inversions occur during warmer months, as descending air associated with the Pacific high-pressure cell comes into contact with cool marine air. The boundary between the two layers of air represents a temperature inversion that traps pollutants below it. Radiation inversions typically develop on winter nights with low wind speeds, when air near the ground cools by radiation, and the air aloft remain warm. A shallow inversion layer that can trap pollutants is formed between the two layers.

In the vicinity of the Convair Lagoon Alternative site, the nearest climatological monitoring station is located at San Diego International Airport, which is located at 3665 North Harbor Drive, adjacent to the northern border of Convair Lagoon, across Harbor Drive. Climatological monitoring stations collect temperature and precipitation data. The normal daily maximum temperature is 76 degrees Fahrenheit (°F) in August, and the normal daily minimum temperature is 48 °F in January, according to the Western Regional Climate Center (WRCC, 2011). The normal precipitation in the project area is 10 inches annually, occurring primarily from December through March.

The nearest National Oceanic and Atmospheric Administration (NOAA) meteorological monitoring station to the Convair Lagoon Alternative site is also located at the San Diego International Airport. Meteorological monitoring stations collect data such as wind direction and wind speed, as well as air temperature and precipitation. The prevailing wind direction at this monitoring station is from the west (NOAA, 2004).

Health Effects Related to Air Pollutants

Federal and state laws regulate the air pollutants emitted into the ambient air by stationary and mobile sources. These regulated air pollutants are known as "criteria air pollutants" and are categorized as primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide, volatile organic compounds (VOC), nitrogen oxides, sulfur dioxide, and most fine particulate matter including lead and fugitive dust (PM_{10} and $PM_{2.5}$) are primary air pollutants. Of these, carbon monoxide, SO_2, PM_{10}, and $PM_{2.5}$ are criteria pollutants. VOCs and nitrogen oxides are criteria pollutant precursors that go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone and nitrogen dioxide (NO_2) are the principal secondary pollutants. Diesel particulate matter is a mixture of particles and is a component of diesel exhaust. The EPA lists diesel exhaust as a mobile source air toxic due to the cancer and non-cancer health effects associated with exposure to whole diesel exhaust.

Presented below is a description of each of the primary and secondary criteria air pollutants and their known health effects.

Carbon Monoxide (CO) is an odorless, colorless, and toxic gas. Because it is impossible to see, taste, or smell the toxic fumes, carbon monoxide can kill people before they are aware that it is in their homes. At lower levels of exposure, carbon monoxide causes mild effects that are often mistaken for the flu. These symptoms include headaches, dizziness, disorientation, nausea, and fatigue. The effects of carbon monoxide exposure can vary greatly from person to person depending on age, overall health, and the concentration and length of exposure (EPA, 2010). The major sources of carbon monoxide in the Basin are on-road vehicles, aircraft, and off-road vehicles and equipment.

Volatile Organic Compounds (VOCs) are defined as any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions. VOCs consist of non-methane hydrocarbons and oxygenated hydrocarbons. Hydrocarbons are organic compounds that contain only hydrogen and carbon atoms. Non-methane hydrocarbons are hydrocarbons that do not contain the un-reactive hydrocarbon, methane. Oxygenated hydrocarbons are hydrocarbons with oxygenated functional groups attached.

It should be noted that there are no state or national ambient air quality standards for VOCs because they are not classified as criteria pollutants. They are regulated, however, because a reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are also transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} levels and lower visibility. Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, higher concentrations of VOCs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, kidneys, and central nervous system (EPA, 1999).

The major sources of VOCs in the SDAB are on-road motor vehicles and solvent evaporation. Benzene, a VOC and known carcinogen, is emitted into the air from gasoline service stations (fuel evaporation), motor vehicle exhaust, tobacco smoke, and from burning oil and coal. Benzene is also sometimes used as a solvent for paints, inks, oils, waxes, plastic, and rubber. It is used in the extraction of oils from seeds and nuts. It is also used in the manufacture of detergents, explosives, dyestuffs, and pharmaceuticals. Short-term (acute) exposure of high doses of benzene from inhalation may cause dizziness, drowsiness, headaches, eye irritation, skin irritation, and respiratory tract irritation. At higher levels, unconsciousness can occur. Long-term (chronic) occupational exposure of high doses by inhalation has caused blood disorders, including aplastic anemia and lower levels of red blood cells (EPA, 1999).

Nitrogen Oxides (NO_x) serve as integral participants in the process of photochemical smog production. The two major forms of nitrogen oxides are nitric oxide (NO) and NO_2. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO_2 is a reddish-brown, irritating gas formed by the combination of NO and oxygen. Nitrogen oxide acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens. Nitrogen oxide is also an ozone precursor. A precursor is a directly emitted air contaminant that, when released into the atmosphere, forms, causes to be formed, or contributes to the formation of a secondary air contaminant for which a National Ambient Air Quality Standard (NAAQS) has been adopted, or whose presence in the atmosphere will contribute to the violation of one or more NAAQS. When nitrogen oxides and VOCs are released in the atmosphere, they chemically react with one another in the presence of sunlight to form ozone.

Ozone (O_3) is one of a number of substances called photochemical oxidants that are formed when VOCs and nitrogen oxides (both byproducts of the internal combustion engine) react with sunlight. Ozone is present in relatively high concentrations in the SDAB, and the damaging effects of photochemical smog are generally related to ozone concentrations. Ozone may pose a health threat to those who already suffer from respiratory diseases as well as healthy people. Additionally, ozone has been tied to crop damage, typically in the form of stunted growth and pre-mature death. Ozone can also act as a corrosive, resulting in property damage such as the embitterment of rubber products.

Lead (Pb) is a solid heavy metal that can exist in air pollution as an aerosol particle component. An aerosol is a collection of solid, liquid, or mixed-phase particles suspended in the air. Lead was first regulated as an air pollutant in 1976. Leaded gasoline was first marketed in 1923 and was used in motor vehicles until around 1970. The exclusion of lead from gasoline helped to decrease emissions of lead in the United States from 219,000 to 4,000 tons per year between 1970 and 1997. Even though leaded gasoline has been phased out in most countries, some, such as Egypt and Iraq, still use at least some leaded gasoline (United Nations Environment Programme, 2010). Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and physical weathering of surfaces containing lead. The mechanisms by which lead can be removed from the atmosphere (sinks) include deposition to soils, ice caps, oceans, and inhalation.

Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. The more serious effects of lead poisoning include behavioral disorders, mental retardation, and neurological impairment. Low levels of lead in fetuses and young children can result in nervous system damage, which can cause learning deficiencies and low intelligence quotients (IQs). Lead may also contribute to high blood pressure and heart disease. Lead concentrations once exceeded the state and national air quality standards by a wide margin but have not exceeded these standards at any regular monitoring station since 1982. Lead is no longer an additive to normal gasoline, which is the main reason that concentration of lead in the air is now much lower. The Convair Lagoon Alternative would not emit lead; therefore, lead has been eliminated from further review in this analysis.

Sulfur Dioxide (SO_2) is a colorless, pungent gas. At levels greater than 0.5 parts per million (ppm), the gas has a strong odor, similar to rotten eggs. Sulfuric acid is formed from SO_2 and is an aerosol particle component that may lead to acid deposition. Acid deposition into water, vegetation, soil, or other materials can harm natural resources and materials. Although SO_2 concentrations have been reduced to levels well below state and national standards, further reductions are desirable because SO_2 is a precursor to sulfates. Sulfates are a particulate formed through the photochemical oxidation of SO_2. Long-term exposure to high levels of SO_2 can cause irritation of existing cardiovascular disease, respiratory illness, and changes in the defenses in the lungs. When people with asthma are exposed to high levels of SO_2 for short periods of time during moderate activity, effects may include wheezing, chest tightness, or shortness of breath.

Particulate Matter (PM) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulate, also known as fugitive dust, are now recognized. Course particles, or PM_{10}, include that portion of the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 one-millionths of a meter or 0.0004 inch) or less. Fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns, that is 2.5 one-millionths of a meter or 0.0001 inch or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities; however, wind action on the arid landscape also contributes substantially to the local particulate loading. Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in those people who are naturally sensitive or susceptible to breathing problems.

Fugitive dust poses primarily two public health and safety concerns. The first concern is that of respiratory problems attributable to the suspended particulates in the air. The second concern is that of motor vehicle accidents caused by reduced visibility during severe wind conditions. Fugitive dust may also cause significant property damage during strong windstorms by acting as an abrasive material agent (similar to sandblasting activities). Finally, fugitive dust can result in a nuisance factor due to the soiling of proximate structures and vehicles.

Diesel particulate matter is a mixture of many exhaust particles and gases that is produced when an engine burns diesel fuel. Many compounds found in diesel exhaust are carcinogenic, including 16 that are classified as possibly carcinogenic by the International Agency for Research on Cancer. Diesel particulate matter includes the particle-phase constituents in diesel exhaust. Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation and exposure can cause coughs, headaches, light-headedness, and nausea. Diesel exhaust is a major source of ambient fugitive dust pollution as well, and numerous studies have linked elevated fugitive dust levels in the air to increased hospital admission, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems (OEHHA, 2001) diesel particulate matter in the SDAB poses the greatest cancer risk of all the toxic air pollutants.

Historical Air Pollutant Levels

The San Diego Air Pollution Control District (SDAPCD) operates a network of ambient air monitoring stations throughout San Diego County. The purpose of the monitoring stations is to measure ambient concentrations of air pollutants and determine whether the ambient air quality meets the NAAQS and the California Ambient Air Quality Standards (CAAQS). The closest ambient monitoring station to the Convair Lagoon Alternative site is the San Diego (Beardsley Street) station. Table 5-9 presents a summary of the ambient pollutant concentrations monitored at the San Diego station during the most recent three years for which data available (2007 through 2009). The corresponding NAAQS and CAAQS are also presented in Table 5-9. The SDAB is currently designated as a nonattainment area for the state standard for PM_{10}, $PM_{2.5}$, 1-Hour and 8-Hour ozone, and the Federal 8-Hour Standard for ozone.

As shown in Table 5-9, the 8-hour ozone concentration exceeded the state standard in 2007 and 2008. The federal standard was not exceeded during this period. The federal 24-hour $PM_{2.5}$ standard was violated nine days during 2007, four days in 2008, and three days in 2009. Neither the state nor federal standards for CO, PM_{10}, NO_2, or SO_2 were exceeded at any time between 2007 and 2009. The federal annual average NO_2 standard has not been exceeded since 1978 and the state one-hour standard has not been exceeded since 1988 (SDAPCD, 2007). With one exception during October 2003, the SDAB has not violated the state or federal standards for CO since 1990 (SDAPCD, 2007).

Attainment Status

The classifications for ozone non-attainment include and range in magnitude from marginal, moderate, serious, severe, and extreme. The SDAB is currently designated as a nonattainment area for the state standard for PM_{10}, $PM_{2.5}$, 1-Hour and 8-Hour ozone, and the Federal 8-Hour Standard for ozone, as shown in Table 5-10.

Table 5-9: Air Quality Monitoring Data

Pollutant	Monitoring Station	2007	2008	2009
Ozone				
Maximum 1-hour concentration (ppm)	1110 Beardsley Street, San Diego	0.087	0.087	0.085
Days above 1-hour state standard (>0.09 ppm)		0	0	0
Maximum 8-hour concentration (ppm)		0.073	0.073	0.063
Days above 8-hour state standard (>0.07 ppm)		1	1	0
Days above 8-hour federal standard (>0.075 ppm)		0	0	0
Carbon Monoxide				
Maximum 8-hour concentration (ppm)	1110 Beardsley Street, San Diego	3.01	2.6	2.77
Days above state or federal standard (>9.0 ppm)		0	0	0
Respirable Particulate Matter (PM_{10})				
Peak 24-hour concentration ($\mu g/m^3$)	1110 Beardsley Street, San Diego	111	59	60
Days above state standard (>50 $\mu g/m^3$)		24	24	18
Days above federal standard (>150 $\mu g/m^3$)		0	0	0
Fine Particulate Matter ($PM_{2.5}$)				
Peak 24-hour concentration ($\mu g/m^3$)	1110 Beardsley Street, San Diego	69.6	42	52.1
Days above federal standard (>35 $\mu g/m^3$)		9	4	3
Nitrogen Dioxide				
Peak 1-hour concentration (ppm)	1110 Beardsley Street, San Diego	0.098	0.091	0.078
Days above state 1-hour standard (0.18 ppm)		0	0	0

Pollutant	Monitoring Station	2007	2008	2009
Sulfur Dioxide				
Maximum 24-hour concentration (ppm)	1110 Beardsley Street, San Diego	0.006	0.007	0.006
Days above 24-hour state standard (>0.04 ppm)		0	0	0
Days above 24-hour federal standard (>0.14 ppm)		0	0	0

PPM = parts per million, µg/m^3 = micrograms per cubic meter
Source: CARB, 2011

Table 5-10: Attainment Status for the San Diego Air Basin

Pollutant	State Status	Federal Status
Ozone (1-hour)	Non-attainment	Note (1)
Ozone (8-hour)	Non-Attainment	Non-attainment(2)
Respirable Particulate Matter (PM_{10})	Non-attainment	Attainment
Fine Particulate Matter ($PM_{2.5}$)	Non-attainment	Attainment
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide (NO_2)	Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Lead (Pb)	Attainment	Attainment

Note (1) The federal 1-hour ozone standard was revoked in 2005 and is no longer in effect for the state of California.
Source: CARB, 2010b

Sensitive Receptors and Locations

The California Air Resources Board (CARB) defines sensitive receptors as residences, schools, day care centers, playgrounds, and medical facilities, or other facilities that may house individuals with health conditions that would be adversely affected by changes in air quality. Land uses surrounding Convair Lagoon generally consist of the San Diego International Airport, airport-related commercial and industrial land uses, and Coast Guard operations. These land uses are not sensitive receptors. The sensitive land uses closest to the alternative area are the residences located near the intersection of Kettner Boulevard and West Laurel Street, approximately 0.8 mile from the alternative site, and Spanish Landing Park, approximately 0.9 mile west of Convair Lagoon. Harbor Island Park is approximately 1.1 miles southwest of Convair Lagoon, but does not include play equipment and is not considered a sensitive land use.

5.10.3.2 Regulatory Setting

Federal

Clean Air Act. The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the U.S. Environmental Protection Agency (EPA) to establish NAAQS with states retaining the option to adopt more stringent standards or to include other specific pollutants.

On April 2, 2007, the Supreme Court found that greenhouse gases (GHGs), including carbon dioxide, are air pollutants covered by the CAA; however, no NAAQS have been established for GHGs.

These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Current NAAQS are listed in Table 5-11. Areas that meet the ambient air quality standards are classified as "attainment" areas while areas that do not meet these standards are classified as "non-attainment" areas.

The CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the SIP, or State Implementation Plan. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The SIP is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The EPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

Resource Conservation and Recovery Act (RCRA) of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984. Federal hazardous waste laws are generally promulgated under the RCRA. These laws provide for the "cradle to grave" regulation of hazardous wastes. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed. DTSC is responsible for implementing the RCRA program as well as California's own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law.

Table 5-11: National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards (1)	Federal Standards (2)	
		Concentration(3)	Primary (3, 4)	Secondary (3, 5)
Ozone (O_3)	1-hour	0.09 ppm (180 µg/m^3)	--	Same as Primary Standards
	8-hour	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary Standards
	Annual Arithmetic Mean	20 µg/m	--	
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard	35 µg/m^3	Same as Primary Standards
	Annual Arithmetic Mean	12 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	8-hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	

Pollutant	Averaging Time	California Standards (1)	Federal Standards (2)	
		Concentration(3)	Primary (3, 4)	Secondary (3, 5)
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	53 ppm (100 µg/m^3)[6]	Same as Primary Standard
	1-hour	0.18 ppm (470 mg/m^3)	100 ppb (188 µg/m^3)[6]	None
Sulfur Dioxide (SO_2)	24 Hour	0.04 ppm (105 µg/m^3)	--	--
	3 Hour	--	--	0.5 ppm (1300 µg/m^3)[7]
	1-hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)[7]	--
Lead(8)	30 Day Average	1.5 µg/m^3	--	--
	Calendar Quarter	--	1.5 µg/m^3	Same as Primary Standard
	Rolling 3-Month Average(9)	--	0.15 µg/m^3	
Visibility Reducing Particles	8-hour	Extinction coefficient of 0.23 per kilometer - visibility of 10 miles or more due to particles.	No Federal Standards	
Sulfates	24 Hour	25 µg/m^3	No Federal Standards	
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m^3)	No Federal Standards	
Vinyl Chloride(8)	24 Hour	0.01 ppm (26 µg/m^3)	No Federal Standards	

(1) California standards for ozone, carbon monoxide, SO_2 (1-hour and 24-hour), NO_2, PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, lead, hydrogen sulfide, and vinyl chloride standards are not to be equaled or exceeded.
(2) National standards, other than 1-hour ozone, 8-hour ozone, 24-hour PM_{10}, 24-hour $PM_{2.5}$, and those based on annual averages, are not to be exceeded more than once a year. The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the annual fourth-highest daily maximum 8-hour concentrations is below 0.08 ppm. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile 24-hour concentrations is below 150 µg/m^3. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of the 98th percentile 24-hour concentrations is below 65 µg/m^3.
(3) Concentration expressed first in units in which it was promulgated. Equivalent units given in parenthesis are based on a reference temperature of 25°C and a reference pressure of 760 mm of mercury (1,013.2 millibar). All measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury; parts per million (ppm) in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
(4) National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
(5) National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
(6) To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). Note that the EPA standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.
(7) On June 2, 2010, the U.S. EPA established a new 1-hour SO2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. EPA also proposed a new automated Federal Reference Method (FRM) using ultraviolet technology, but will retain the older pararosaniline methods until the new FRM have adequately permeated state monitoring networks. The EPA also revoked both the existing 24-hour SO2 standard of 0.14 ppm and the annual primary SO2 standard of 0.030 ppm, effective August 23, 2010. The secondary SO2 standard was not revised at that time; however, the secondary standard is undergoing a separate review by EPA. Note that the new standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the new primary national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
(8) The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
(9) National lead standard, rolling 3-month average: final rule signed October 15, 2008.
Source: CARB, 2010a.

State

California Clean Air Act. The CAA allows states to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. The California Clean Air Act (CCAA) was signed into law in 1988 and spelled out in statute California's air quality goals, planning mechanisms, regulatory strategies, and standards of progress. The CCAA provides the state with a comprehensive framework for air quality planning regulation. Prior to passage of the CCAA, federal law contained the only comprehensive planning framework. The CAA requires attainment of state ambient air quality standards by the earliest practicable date (CARB, 2003). The CARB, a part of the California EPA (CalEPA) is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. The CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. The CARB has primary responsibility for the development of California's SIP, for which it works closely with the federal government and the local air districts.

In addition to standards set for the six criteria pollutants, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles (see Table 5-11). These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Further, in addition to primary and secondary AAQS, the state has established a set of episode criteria for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and particulate matter. These criteria refer to episode levels representing periods of short-term exposure to air pollutants that actually threaten public health.

Local

San Diego County Regional Air Quality Strategy and State Implementation Plan. The SDAPCD is the local agency responsible for the administration and enforcement of air quality regulations for the SDAB, which includes all of San Diego County. The SDAPCD regulates most air pollutant sources, except for motor vehicles, marine vessels, aircrafts, and agricultural equipment, which are regulated by the CARB or the EPA. State and local government projects, as well as projects proposed by the private sector, are subject to SDAPCD requirements if the sources are regulated by the SDAPCD. Additionally, the SDAPCD, along with the CARB, maintains and operates ambient air quality monitoring stations at numerous locations throughout San Diego County. These stations are used to measure and monitor ambient criteria and toxic air pollutant levels.

The SDAPCD and the San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The San Diego County RAQS were initially adopted in 1991, and is updated on a triennial basis. The RAQS were updated in 1995, 1998, 2001, 2004, and most recently in April 2009. The RAQS outline the SDAPCD's plans and control measures designed to attain the state air quality standards for ozone. The SDAPCD has also developed the SDAB's input to the SIP, which is required under the CAA for pollutants that are designated as being in non-attainment of national air quality standards for the basin.

The RAQS rely on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in the county, to project future emissions and then establish the strategies necessary for the reduction of emissions through regulatory controls. The CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and by the County of San Diego (County) as part of the development of their general plans. As such, projects that propose development consistent with the growth anticipated by the general plans would be consistent with the RAQS. In the event that a project would propose development which is less dense than anticipated within the general plan, the project would likewise be consistent with the RAQS. If a project proposes development that is greater than that anticipated in the general plan and SANDAG's growth projections, the project might be in conflict with the RAQS and SIP, and might have a potentially significant impact on air quality.

The SIP relies on the same information from SANDAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin. The SIP also includes rules and regulations that have been adopted by the SDAPCD to control emissions from stationary sources. These SIP-approved rules may be used as a guideline to determine whether a project's emissions would have the potential to conflict with the SIP and thereby hinder attainment of the NAAQS for ozone.

In addition to the RAQS and SIP, the SDAPCD adopted the *Measures to Reduce Particulate Matter in San Diego County* report in December 2005. This report is based on particulate matter reduction measures adopted by CARB. SDAPCD evaluated CARB's list of measures and found that the majority were already being implemented in San Diego County. As a result of the evaluation SDAPCD proposed measures for further evaluation to reduce particulate matter emissions from residential wood combustion and from fugitive dust from construction sites and unpaved roads.

Clean Air Program. The District implements a Clean Air Program, the goal of which is to voluntarily reduce air emissions from current District operations in advance of regulatory action through the identification and evaluation of feasible and effective control measures for each category of District operations. This comprehensive program provides a framework for reducing air emissions at the Cruise Ship Terminal, Tenth Avenue Marine Terminal and National City Marine Terminal. The 2007 Clean Air Program Report identifies control measures that can be implemented in the near-term and measures that are part of a long-term strategy to reduce air emissions, building upon regulatory and voluntary efforts. This program applies only to the operations of the District.

San Diego Air Pollution Control District Rule 55, Fugitive Dust Control. The SDAPCD requires that construction activities implement the measures listed in Rule 55 to minimize fugitive dust emissions. Rule 55 requires the following:

i. No person shall engage in construction or demolition activity in a manner that discharges visible dust emissions into the atmosphere beyond the property line for a period or periods aggregating more than 3 minutes in any 60 minute period; and

ii. Visible roadway dust as a result of active operations, spillage from transport trucks, erosion, or track-out/carry-out shall be minimized by the use of any of the equally effective trackout/carry-out and erosion control measures listed in Rule 55 that apply to the project or operation. These measures are: track-out grates or gravel beds at each egress point; wheel-washing at each egress during muddy conditions; soil binders, chemical soil stabilizers, geotextiles, mulching, or seeding; and using secured tarps or cargo covering, watering, or treating of transported material for outbound transport trucks. Erosion control measures must be removed at the conclusion of each work day when active operations cease, or every 24 hours for continuous operations.

Title 22 of the California Code of Regulations & Hazardous Waste Control Law, Chapter 6.5. The DTSC regulates the generation, transportation, treatment, storage and disposal of hazardous waste under RCRA and the California Hazardous Waste Control Law. Both laws impose "cradle to grave" regulatory systems for handling hazardous waste in a manner that protects human health and the environment.

5.10.3.3 Methodology

The analysis in this section focuses on the nature and magnitude of the change in the air quality environment due to implementation of the Convair Lagoon Alternative.

Construction Emissions

Construction emissions for the Convair Lagoon Alternative construction phases are assessed using the Urban Emissions Model (URBEMIS, 2007, version 9.2.4) distributed by the CARB, with the exception of emissions from the tug boats required for barge transport. The URBEMIS 2007 model uses EMFAC 2007 emissions factors for vehicle traffic and Off-Road 2007 for construction equipment. Emissions from the Shipyard Sediment Site construction activities and tug boat emissions factors were provided by LSA Associates, Inc. in the Air Quality Analysis for the Shipyard Sediment Project, included as Appendix G to this EIR. The construction analysis includes modeling of the projected construction equipment that would be required during each phase of construction for the CDF and quantities or materials to be imported on site and exported off site. The analysis assesses maximum daily emissions from each individual phase of construction, including site preparation, jetty construction, sediment transportation and placement, and containment cap installation. To be conservative, where several construction options are being considered, the most conservative is assumed in order to analyze the worst case scenario. A complete listing of the assumptions used in the model and model output is provided in Appendix I. When construction at the Shipyard Sediment Site and Convair Lagoon construction activities are projected to overlap, construction emissions from both sites are added together to determine the total maximum daily emissions.

Operational Emissions

Operational impacts are discussed qualitatively due to the lack of operational emission sources associated with the Convair Lagoon Alternative.

5.10.3.4 Thresholds of Significance

Threshold 5.10.3.1: Consistency With Regional Plans. Based on Appendix G of the CEQA Guidelines, an impact related to consistency with applicable air quality plans would be considered significant if implementation of the Convair Lagoon Alternative would result in a conflict with, or obstruct implementation of, the RAQS or SIP.

Threshold 5.10.3.2: Conformance to Federal and State Ambient Air Quality Standards. Based on Appendix G of the CEQA Guidelines, an impact would be considered significant if the Convair Lagoon Alternative would violate any air quality standard or contribute substantially to an existing or projected air quality violation. The SDAPCD does not provide quantitative thresholds for determining the significance of construction or mobile source-related projects. Therefore, the following thresholds established in the *City of San Diego California Environmental Quality Act Significance Determination Thresholds* (January 2011) were used. The thresholds listed in the City's Guidelines are based on the SDAPCD's stationary source emission thresholds. Based on the criteria set forth in the City Guidelines, a project would have a significant impact with regard to construction or operational emissions if it would exceed any of the thresholds listed in Table 5-12. The City of San Diego does not have a threshold for $PM_{2.5}$; therefore, the EPA "Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards" published in 2005, which quantifies significant emissions as approximately 55 pounds per day, is used as the threshold.

Threshold 5.10.3.3: Sensitive Receptors. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant air quality impact if it would result in the exposure of sensitive receptors to substantial pollutant concentrations.

Threshold 5.10.3.4: Objectionable Odors. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant air quality impact if it would create objectionable odors that would affect a substantial number of people.

Table 5-12: City of San Diego Pollutant Thresholds

Pollutant	Pounds Per Day
Carbon monoxide (CO)	550
Nitrogen Oxides (NO_X)	250
Respirable Particulate Matter (PM_{10})	100
Fine Particulate Matter ($PM_{2.5}$)	55[(1)]
Oxides of Sulfur (SO_X)	250
Volatile Organic Compounds (VOC)	137

[(1)] USEPA "Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards" published September 2005.
Source: City of San Diego, 2011

5.10.3.5 Impacts and Mitigation Measures

Less Than Significant Impacts

Threshold 5.10.3.1: Consistency with Regional Plans. The air quality plans relevant to this discussion are the SIP and RAQS. As discussed above, the SIP includes strategies and tactics to be used to attain and maintain acceptable air quality in the Basin; this list of strategies is called the RAQS. Consistency with the RAQS is typically determined by two standards. The first standard is whether the Convair Lagoon Alternative would exceed assumptions contained in the RAQS. The second standard is whether the Convair Lagoon Alternative would increase the frequency or severity of existing air quality violations, contribute to new violations, or delay the timely attainment of air quality standards or interim reductions as specified in the RAQS.

The RAQS rely on information from the CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in the County, to forecast future emissions and then determine the strategies necessary for the reduction of emissions through regulatory controls. The CARB mobile source emissions projections and the SANDAG growth projections are based on population and vehicle use trends and land use plans developed by the cities and the County as part of the development of the County's and cities' general plans. As such, projects that propose development consistent with, or less than, the growth projections anticipated by a general plan would be consistent with the RAQS. For this alternative the Port Master Plan is the document governing future land use that was considered as part of SANDAGs projections.

The proposed PMPA would result in changes to the 10 acres of water use designations on the site. Under the proposed PMPA, all existing water areas of the Convair Lagoon Alternative site would change their use designation to Harbor Services (land), as illustrated in Figure 5-6. The Harbor Services use category in the PMP identifies land and water areas devoted to maritime services and harbor regulatory activities of the District, including remediation and monitoring. As illustrated in Figure 5-5**,** the area within the proposed PMPA boundary would be designated as Harbor Services (water)(5 acres), Industrial Specialized Berthing (water) (4.5 acres), and Boat Navigation Corridor (water) (0.5 acre). The following provides a discussion of each of the land use designation changes and their consistency with the RAQS.

The change is land use designation from Harbor Services (water) to Harbor Services (land) would not result in a change that would affect SANDAG growth projections, because the description of uses allowed for this designation is the same whether it applies to water or land uses in the Port Master Plan.

The change in designation from Industrial Specialized Birthing (water) to Harbor Services (land) would change the allowable uses for this 4.5 acre area of the Port Master Plan from a variety of marine related commercial and industrial uses, such as ship building and repair, water taxi, excursion and ferry craft, commercial fishing boat berthing, and other marine-related uses, to the proposed Harbor Services (land) designation which would only allow maritime services and harbor regulatory activities of the District, including remediation and monitoring. The proposed land use designation would therefore allow less intense development because marine services under the proposed Harbor Services designation would only allow service related activities, whereas the Industrial Specialized Birthing would allow more intense industrial and commercial related water uses. Therefore this change in land use designation would not result in development that would be greater than the growth projections developed by SANDAG.

The last land use designation that would be changed as part of the project would be the change from the 0.5-acre Boat Navigation Corridor designation (water) to Harbor Services (land). The existing designation is a water category for those water areas delineated by navigational channel markers or by conventional waterborne traffic movements. This category does not allow any land use development that would be part of the SANDAG's growth projections, whereas the proposed Harbor Services (land) designation would allow marine services development. However, the marine services use is less intense than the Industrial Specialized Birthing (water) designation that will also be changed to Harbor Services (land). Therefore the 0.5 acre increase in development intensity associated with the change from Boat Navigation Corridor is offset by the less intense development associated with the change from Industrial Specialized Birthing (water). The end result is that the proposed PMPA would be consistent with the SANDAG growth projections used in developing the RAQS.

The second standard is whether the Convair Lagoon Alternative would increase the frequency or severity of existing air quality violations, contribute to new violations, or delay the timely attainment of air quality standards or interim reductions as specified in the RAQS. This standard applies to long-term project operational emissions. Because nearly all of the Convair Lagoon Alternative generated air pollutant emissions are associated with short-term construction activities, this standard would not apply to this alternative.

Threshold 5.10.3.3: Impacts to Sensitive Receptors. CARB defines sensitive receptors as residences, schools, day care centers, playgrounds, and medical facilities, or other facilities that may house individuals with health conditions that would be adversely affected by changes in air quality. The two primary emissions of concern regarding health effects for land development are carbon monoxide and diesel particulates.

Carbon Monoxide Hotspots. Carbon monoxide is the criteria pollutant that is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere. Long-term adherence to ambient air quality standards is typically demonstrated through an analysis of localized carbon monoxide concentrations. Areas of vehicle congestion have the potential to create carbon monoxide hot spots. These hot spots typically occur at intersections where vehicle speeds are reduced and idle time is increased. Intersections that tend to exhibit a significant carbon monoxide concentration typically operate at level of service (LOS) D or worse.

The Convair Lagoon Alternative would result in a temporary increase in vehicle trips on local roads during construction. However, similar to the Shipyard Sediment Site Project, construction of the Convair Lagoon Alternative would not change the number of long-term off-site vehicle trips. Upon completion of construction, the Convair Lagoon Alternative would consist of an undeveloped, above-ground parcel of land. No permanent traffic would occur from operation of the Convair Lagoon Alternative. Occasional vehicle trips for monitoring, maintenance, or repair of the cap would not impact the level of service of local intersections and would not result in a carbon monoxide hotspot. Therefore, no significant CO contributions would occur in the project vicinity.

Toxic Air Contaminants, Diesel Particulate Matter. Diesel trucks and other diesel engines are sources of diesel particulate matter. Similar to the Shipyard Sediment Site Project, construction of the CDF would require the use of heavy construction equipment and up to approximately 100 one-way diesel truck trips per day. Construction emissions would be temporary and would not result in a long-term increase in exposure to TAC emissions. Additionally, the LSA report included a health risk assessment of truck trips associated with the Shipyard Sediment Site Project. The Proposed Project would also result in a maximum of 100 truck trips per day and would result in greater total truck trips than the Convair Lagoon Alternative because all of the contaminated sediment would be transported by truck. The health risk assessment results indicated that the truck trips associated with the Shipyard Sediment Site project would not substantially increase cancer, chronic or acute health risks (LSA 2011). Following construction, the sand cap would not require diesel trucks for maintenance of the cap. Therefore, because the Proposed Project does not represent a health risk with respect to diesel particulate matter and the Convair Lagoon Alternative will result in fewer truck trips than the Proposed Project, diesel particulate matter emissions would be a less than significant health risk.

Toxic Air Contaminants, Contaminated Sediment. Mercury, zinc, copper, PAHs and PCBs bind to sediment and may be introduced to the air as part of dust (NOAA, 1996; ATSDR, 1996, 2001, 2004, and 2005). Therefore, if the contaminated sediment would be disturbed so that fugitive dust particles would be released into the air, exposure to these pollutants may occur. However, similar to construction activities for the Proposed Project, the Convair Lagoon Alternative would involve transport and placement of wet material. Similar to the Proposed Project, up to 15 percent of the dredged contaminated sediments would require dewatering prior to being transported to a landfill. The drying area would be surrounded by k-rails and sealed with foam and impervious fabric to form a confined area. As a result, little fugitive dust is expected to be generated by these operations (LSA 2011). In addition, the Convair Lagoon Alternative CDF includes a sand and asphalt cap to prevent contaminated sediment near the surface from becoming fugitive dust particles that would be released into the air following construction.

Additionally, construction activities would include several safeguards intended to protect water quality that would also minimize the potential release of contaminants during activities that would disturb the sediment. Silt and/or air curtains would be placed around the barges during barge loading operations, and unloading activities would utilize enclosed pipes or clamshell cranes to unload the sediment into the CDF. These measures would minimize the potential for sediment to be released into an area where the sediments have the potential to dry and become airborne. Transport and handling of the contaminated sediment would also be required to comply with numerous federal, state and local regulations that require strict adherence to specific guidelines regarding the use, transportation, and disposal of hazardous materials, including RCRA, which provides the ‘cradle to grave’ regulation of hazardous wastes, and CCR Title 22, which regulates the generation, transportation, treatment, storage and disposal of hazardous wastes. Therefore, potential exposure of sensitive receptors to air pollutants from transportation and handling of the contaminated sediment would be less than significant.

Toxic Air Contaminants, Stationary Sources. Stationary sources of TAC emissions identified in CARB’s Air Quality and Land Use Handbook (2005) are freeways, rail yards, ports, refineries, dry cleaners, and large gas dispensing facilities. The Convair Lagoon Alternative would consist of an undeveloped, above-ground parcel of land. It would not result in a source of stationary TAC emissions. Additionally, the Convair Lagoon Alternative does not propose any new sensitive land uses. Therefore, the Convair Lagoon Alternative would not expose any sensitive receptors to a substantial pollutant concentration and impacts would be less than significant.

Potentially Significant Impacts

Threshold 5.10.3.2: Conformance to Federal and State Ambient Air Quality Standards.

Construction. Air pollutant emission sources during CDF construction would include exhaust and particulate emissions generated from construction equipment, tug boat operations during sediment transport, and truck trips to transport imported material from the

Convair Lagoon site. As discussed above, construction of the Convair Lagoon Alternative is estimated to occur over a duration of approximately 15 months and would consist of five phases: 1) Site Preparation; 2) Containment Barrier Construction; 3) Storm Drain Outlet Extension; 4) Sediment Transport and Placement; and 5) Containment Cap Installation. Dump trucks with a capacity of 12.22 cubic yards (CY) were assumed for the importation and exportation of materials for all phases of construction (LSA 2011). During each construction phase, the Convair Lagoon Alternative would employ approximately ten construction workers. It is assumed that each worker would generate four trips per day, for a total of 40 average daily worker trips. Construction would occur Monday through Friday for eight hours during normal working hours. The phase-specific assumptions used to determine the emissions of each of these five construction phases are described below.

The Convair Lagoon Alternative would also require the construction activities associated with the preparation of the Shipyard Sediment Site for dredging, and dredging operations. Additionally, construction of a landside pad, pad operations, and covering of sediment would occur under the Convair Lagoon Alternative to prepare 15 percent of the sediment for disposal at the Kettleman Hills Landfill. All assumptions and calculated emissions associated with these construction phases are provided in the *Air Quality Analysis, Shipyard Sediment Project, California Regional Water Quality Control Board, San Diego Region* (LSA, 2011), included as Appendix G to this EIR.

Phase 1: Site Preparation. This phase of construction would include the demolition of the existing concrete pier, riprap, concrete mattress energy dissipaters, and the abandoned seaplane marine ramp. Excavation for the containment barrier is part of site preparation; however, it would occur concurrently with containment barrier construction. Therefore, emissions from excavation activities are addressed below under Phase 2. Removal of the pier would involve cutting the existing support piles to the approximate existing mud-level. In total, approximately 500 CY of materials would be demolished. Demolished facilities would be reused on site as fill material. Demolition would take approximately two months to complete. Demolition would be conducted from the existing shoreline using tracked excavators with breaker hammers, and loaders. Table 5-13 shows the maximum daily emissions that would occur from site preparation in comparison with the thresholds of significance. As shown in Table 5-13, site preparation related emissions would be below the significance thresholds.

Table 5-13: Site Preparation Maximum Daily Emissions

Construction Phase	Pollutant Emissions (pounds/day)					
	CO	NO_X	VOC	SO_X	PM_{10}	$PM_{2.5}$
Site Preparation	19	38	5	0	2	2
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	No	No	No	No	No

Bold = Exceeds threshold
CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: URBEMIS, 2007. See Appendix I for data sheets.

Phase 2: Containment Barrier Construction. Excavation for the containment barrier jetty would occur concurrently with construction of the barrier and would take approximately four months. To prepare the site for construction of the containment barrier, approximately three feet of existing sediment would be excavated within the footprint of the proposed barrier for a total of approximately 13,000 CY of excavated material. This excavated material would be stockpiled on the adjacent rental car parking lot and reused on site as fill material in shallow water portions of the site. The excavated material would be removed by dredging equipment from the shoreline, either hydraulically by pumped pressure, or by crane and clamshell. Based on the air quality analysis prepared for the Port of Los Angeles Channel Deepening project (Port of Los Angeles, 2009), use of a crane and clamshell would be the worst-case scenario in this situation and is assumed for this analysis. Equipment would consist of a main hoist that consists of the crane and clamshell, and two large generators to remove the material and stockpile it in the rental car parking lot. Subsequent to completion of the containment barrier this material would moved to the CDF.

Rock and aggregate material used to construct the containment barrier would be imported from a nearby quarry located approximately 15 miles from the Convair Lagoon Alternative site. In total, the containment barrier would require the import of approximately 49,000 CY of materials, including 8,000 CY of armor rock material, 3,000 CY of underlayer rock material, and 38,000 CY of core aggregate material. The containment barrier would include an engineered filter on the north face, consisting of graded rock or geotextile fabric. The filter would be approximately 7,000 square yards and would be anchored to the containment barrier with 2,000 CY of imported rock. The jetty would also include two energy dissipaters for the extended storm drains, which would require 150 CY of imported material each. Therefore, a total of 51,300 CY would be imported during this phase. A weir would be constructed and would consist of a low crest in the containment barrier or a pipe in the structural fill of the barrier.

Construction of the containment barrier would occur using either the placement method or the end dumping method. Placement construction is considered the worst case scenario because it would require use of a barge and a crane, which would require towing by a tug boat. The crane would be used from both the land side for movement of material into a barge and from the barge for placement of rock and other material associated with the confinement barrier. Armor rock layers would require individual rock placement, using a crane mounted on a barge, to promote stress distribution and uniform coverage. The placement of core rock may include bottom dumping. It is assumed one barge would be used and the tug boat would operate for eight hours. Other construction equipment required for the construction of the containment barrier would include a front loader, hydraulic pumps, and cranes.

Table 5-14 shows the maximum daily emissions that would occur from excavation and jetty construction in comparison with the thresholds of significance. As shown in Table 5-14, related emissions would be below the significance thresholds.

Excavation and construction of the containment barrier may overlap with site preparation at the Convair Lagoon. Table 5-15 shows the maximum daily emissions that would occur from concurrent site preparation and containment barrier construction at Convair Lagoon. As shown in this table, simultaneous site preparation, excavation, and construction of the containment barrier at the Convair Lagoon would not exceed any significance thresholds.

Table 5-14: Barrier Construction Maximum Daily Emissions

Construction Phase	Pollutant Emissions (pounds/day)					
	CO	**NO_X**	**VOC**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Excavation and Import and Export of Material	30	92	7	0	23	7
Installation of Jetty	22	28	4	0	2	1
Tug Boat Operation	15	81	3	1	3	2
Sum of Barrier Construction Emissions	*67*	*201*	*14*	*1*	*28*	*10*
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	No	No	No	No	No

CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: URBEMIS, 2007, and LSA, 2011 See Appendix I for data sheets.

Table 5-15: Convair Lagoon Site Preparation and Containment Barrier Construction Maximum Daily Emissions

Construction Phase	Pollutant Emissions (pounds/day)					
	CO	**NO_X**	**VOC**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Site Preparation	19	38	5	0	2	2
Containment Barrier Construction	67	201	14	1	28	10
Total Phase 1 and Phase 2 Emissions	*86*	*239*	*19*	*1*	*30*	*12*
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	No	No	No	No	No

Bold = Exceeds threshold
CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: URBEMIS, 2007. See Appendix I for data sheets.

Phase 3: Storm Drain Outlet Extension. Extension of two existing on-site storm drains to the face of the containment barrier would take two months and would occur concurrently with construction of the jetty. Extension would require installation of a gravel rock bed to support the storm drains. A total of 2,200 CY of material is assumed to be imported and placed using the end dumping construction method. The extension of storm drains and construction of energy dissipaters would require earthwork or marine machinery, including cranes and an excavator. According to the EPA, Category 1 marine equipment, which typically includes non-locomotive engines such as construction equipment, uses engines that are similar to land-based large earth moving machines (EPA, 1999). Therefore, land-based construction equipment including a grader and backhoe are used to estimate marine equipment emissions. Table 5-16 shows the maximum daily emissions that would occur from extension of the storm drains in comparison with the thresholds of significance. As shown in Table 5-16, storm drain extension emissions would be below the significance thresholds.

Table 5-16: Storm Drain Extension Construction Maximum Daily Emissions

Construction Phase	**Pollutant Emissions (pounds/day)**					
	CO	**NO_X**	**VOC**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Material Import	1	3	0	0	1	1
Construction of Rock Containments	22	28	4	0	2	1
Sum of Storm Drain Extension Emissions	*23*	*31*	*4*	*0*	*3*	*2*
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	No	No	No	No	No

CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: URBEMIS, 2007. See Appendix I for data sheets.

Storm drain extension may occur concurrently with the end of excavation and construction of the containment barrier at the Convair Lagoon. Table 5-17 shows the maximum daily emissions that would occur from concurrent storm drain extension and containment barrier construction at Convair Lagoon. As shown in these tables, simultaneous excavation and construction of the containment barrier and storm drain extension would not exceed any significance thresholds.

Table 5-17: Storm Drain Extension and Containment Barrier Construction Maximum Daily Emissions

Construction Phase	**Pollutant Emissions (pounds/day)**					
	CO	**NO_X**	**VOC**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Storm Drain Extension	23	31	4	0	3	2
Containment Barrier Construction	67	201	14	1	28	10
Total Phase 2 and Phase 3 Emissions	*90*	*232*	*18*	*1*	*31*	*12*
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	No	No	No	No	No

Bold = Exceeds threshold
CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: LSA, 2011

Phase 4: Sediment Transport and Placement. Phase 4 of construction would involve the transport and placement of approximately 121,890 CY of contaminated marine sediment dredged from the Shipyard Sediment Site. It is assumed that the transport and placement phase would take six months. Dredged contaminated marine sediment from the Shipyard

Sediment Site Project would be transported to the Convair Lagoon Alternative site via barges and placed within the submerged areas of the lagoon as hydraulic fill. The contaminated marine sediment would be transported via barges towed by 1,650 horsepower tug boats from the shipyard area to the Convair Lagoon Alternative site. It is assumed that a maximum of four tug boats and barges would be required per day and that each of the tug boats would be operating for eight hours per day, which is consistent with the assumptions used for the proposed Shipyard Sediment Site Project. The contaminated sediment would be transferred from the barges to the CDF through the use of pumps, pipelines and hoses, or clamshell cranes. For this phase of construction the use of pumps represents the worst case scenario based on information provided in the *Final EIS for the Proposed Homeporting of Additional Surface Ships at Naval Station Mayport, Florida*. This EIS identified offloading dredged sediment from barges, using pumps that would be powered by a 50 horsepower diesel engine, with two pumps required per barge (NAVFAC, 2008). In addition to the sediment placed in the CDF, this alternative includes approximately 24,737 CY of sediment that would be hauled by truck from the Shipyard Sediment Site dewatering area to Kettleman Hills Landfill, located approximately 480 miles round trip from the dewatering area.

The sediment from the Shipyard Sediment Site may include elevated levels of copper, mercury, zinc, PAHs, and PCBs (LSA 2011). PAHs are not VOCs (ATSDR 1996); therefore, heavy metals and PAHs in the sediment are not criteria pollutants. Some PCBs may exist as vapor; however, in water PCBs bind strongly to organic particles and bottom sediments (ATSDR, 2001). Therefore, the PCBs associated with the wet shipyard sediment would be bound to the sediment and would not result in additional VOC emissions. The potential for sensitive receptors to be exposed to these pollutants is discussed in Section 5.10.3.5.1, Threshold 5.10.3.3, Impact to Sensitive Receptors.

Table 5-18 shows the maximum daily emissions that would occur from the transfer and placement of sediment in comparison with the thresholds of significance. As shown in Table 5-18, all emissions would be below the significance thresholds, with the exception of emissions of nitrogen oxides.

Table 5-18: Sediment Transport and Placement Maximum Daily Emissions

Construction Phase	Pollutant Emissions (pounds/day)					
	CO	**NO_X**	**VOC**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Tug Boat Operations	61	325	13	5	10	10
Material Placement	35	40	7	0	3	2
Kettleman Hills Landfill Disposal Truck Trips	54	155	11	0	7	6
Sum of Phase 4 Emissions	*150*	***520***	*31*	*5*	*20*	*18*
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	**Yes**	No	No	No	No

Bold = Exceeds threshold
CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: URBEMIS, 2007, and LSA, 2011. See Appendix I for data sheets.

Sediment transport and placement of the contaminated sediment in the CDF would occur concurrently with construction activities at the Shipyard Sediment Site. Site preparation would occur prior to dredging and pad construction activities. However, dredging would potentially overlap with landside pad construction and operation, and covering of the sediment near structures. The total maximum daily emissions that would result from sediment transport and placement in the CDF concurrently with the Shipyard Sediment Site preparation are shown in Table 5-19. The total maximum daily emissions that would result from sediment transport and placement concurrently with Shipyard Sediment Site dredging, pad construction and operation, and covering of sediment are shown in Table 5-20. As shown in these tables, emissions of nitrogen oxides would exceed significance thresholds during any phase of Shipyard Sediment Site construction concurrent with sediment transfer and placement in the CDF.

Table 5-19: Convair Lagoon Sediment Transfer and Placement and Shipyard Sediment Site Debris and Pile Removal Maximum Daily Emissions

Construction Phase	Pollutant Emissions (pounds/day)					
	CO	**NO_X**	**VOC**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Sediment Transport and Placement	150	**520**	31	5	20	18
Debris and Pile Removal	54	148	8	5	5	5
Total Emissions	*204*	***668***	*39*	*10*	*25*	*23*
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	**Yes**	No	No	No	No

Bold = Exceeds threshold
CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: URBEMIS, 2007, and LSA, 2011 See Appendix I for data sheets.

Table 5-20: Sediment Transport and Placement and Shipyard Sediment Site Construction Maximum Daily Emissions

Construction Phase	Pollutant Emissions (pounds/day)					
	CO	**NO_X**	**VOC**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Sediment Transport and Placement	150	**520**	31	5	20	18
Dredging of Shipyard Sediment Site(1)	10	16	1	4	1	1
Landside Operations – Pad Construction	83	164	14	20	9	8
Landside Operations – Operation(1)	20	39	3	7	2	2
Covering Sediment Near Structures	31	105	6	4	4	4
Total Emissions	*294*	***844***	*55*	*40*	*36*	*33*
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	**Yes**	No	No	No	No

(1) These emissions do not include the tug boat emissions and truck trips associated with sediment transport for the Shipyard Sediment Site Project because these trips would not occur under the Convair Lagoon Alternative. Barge and truck haul trip emissions that would occur under the Convair Lagoon Alternative are included in the emissions in Table 5-18.
Bold = Exceeds threshold
CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: LSA, 2011

Phase 5: Containment Cap Construction. Containment cap construction would involve the import and installation of a one-foot thick containment cap consisting of sand and asphalt. This construction phase would have a duration of approximately four months. The engineered cap would consist of clean sand placed over the contaminated fill material, then paved with asphalt, to isolate the contaminated material from the community. During this phase of construction, approximately 12,000 CY of sand 4,000 CY of asphalt would be imported to the site and placed above the contaminated sediment by unloading the sand directly from the trucks. Construction equipment required for Phase 5 would include trucks and earthwork equipment such as a graders and loaders. Following placement of the sand cap, the cap would be paved with asphalt. Table 5-21 shows the maximum daily emissions that would occur from the construction of the cap in comparison with the thresholds of significance. As shown in Table 5-21, all cap construction emissions would be below the significance thresholds.

Table 5-21: Containment Cap Construction Maximum Daily Emissions

Construction Phase	Pollutant Emissions (pounds/day)					
	CO	**NO_X**	**VOC**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Import of Material	3	9	1	0	1	1
Construction of Cap	25	30	4	0	2	2
Paving	15	11	3	0	1	1
Sum of Emissions	*43*	*50*	*8*	*0*	*4*	*4*
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	No	No	No	No	No

Bold = Exceeds threshold
CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: URBEMIS, 2007. See Appendix I for data sheets.

Summary. None of the individual phases of construction would exceed the significance thresholds for any pollutant, with the exception of the sediment transfer and placement phase. Sediment transfer and placement would exceed the significant thresholds for nitrogen dioxide. Additionally, this phase of construction would occur concurrently with construction activities at the Shipyard Sediment Site, which would result in additional nitrogen oxide emissions. Therefore, this impact would be potentially significant.

Operational. Upon completion of construction, the site would consist of undeveloped land with an elevation of approximately 10 feet MLLW. The Convair Lagoon Alternative does not include the development of any buildings or structures on the converted site and no permanent dewatering would be required. Therefore, the CDF does not propose any stationary sources of criteria air pollutants. Occasional vehicle trips may be required for monitoring, maintenance, and, repair of the cap, which would require minimal vehicles trips and equipment. Therefore, these activities would not result in emissions that would exceed significance thresholds. Operational emissions associated with the CDF would be less than significant.

Threshold 5.10.3.4: Objectionable Odors. Construction associated with implementation of the Convair Lagoon Alternative could result in minor amounts of odor compounds associated with diesel heavy equipment exhaust. According to the Ventura County Air Pollution Control District (VCAPCD), stationary land uses that generate objectionable odors may create a nuisance to receptors up to two miles away from the source (VCAPCD 2003) include wastewater treatment plants, petroleum refineries, and dairy and feed lots, among other industrial and agricultural uses. Construction emissions do not result in odors nearly as strong as these land uses; therefore, a two mile screening threshold is conservative for this analysis. The nearest existing sensitive receptor to the construction site are the residences located approximately 0.8 mile from the Alternative site, and the Spanish Landing Park, located approximately 0.9 mile west of Convair Lagoon, that may be exposed to temporary nuisance odors from construction. Not all construction equipment would be operating at once, and would be located throughout the construction and staging areas, so that the potential for a particular receptor to be exposed to odors during construction may not occur. Therefore, nuisance odors would be intermittent and would cease upon the completion of construction. Additionally, visitors to the park would only be exposed to odors for the short period of time while they are using the park facilities. The residences are currently exposed to sources of exhaust odors from the major roadways between the residences and the Alternative site, including Pacific Highway and Interstate 5. Therefore, construction would not expose a substantial number of people to new nuisance odors. Land uses immediately surrounding the construction area are the San Diego International Airport, the United States North Harbor Drive Coast Guard Facility, and a rental car parking lot. These land uses would not be sensitive to intermittent diesel odors because they are not considered sensitive receptors. Therefore, similar to the Proposed Project, impacts associated with nuisance odors from diesel exhaust would not be significant under the Convair Lagoon Alternative.

Similar to the proposed project, approximately 15 percent of dredged contaminated sediment would require dewatering as part of the Convair Lagoon Alternative. Additionally, dredged sediment from the Convair Lagoon Site for containment barrier construction would be stockpiled during construction of the barrier. It is anticipated that the dredged sediment from both sites will contain organic materials and that the decomposition of the organic matter may generate unpleasant odors. Therefore, similar to the Proposed Project, the dredged material may result in a potentially significant temporary odor impact in the vicinity of the dredging and dredge drying operations.

The CARB's Air Quality and Land Use Handbook identifies a list of the most common sources of odor complaints received by local air districts. Typical sources of odor complaints include facilities such as sewage treatment plants, landfills, recycling facilities, petroleum refineries, and livestock operations. The Convair Lagoon Alternative includes the development of a CDF. The contaminated sediment contains organic matter that may emit odors if it would be exposed to the air and allowed to decay. However, upon completion of CDF construction, the sediment would be completely contained within an asphalt-paved, undeveloped parcel of land located approximately 10 feet MLLW. Paved lots do not generate objectionable odors. Therefore, the Convair Lagoon Alternative would not generate objectionable odors and odor impacts would be less than significant.

Mitigation Measures

The following mitigation measures are required to reduce significant impacts to nitrogen oxide emissions and objectionable odors. The measures are organized to correlate to the various significant impacts identified above by threshold.

Threshold 5.10.3.2: Conformance to Federal and State Ambient Air Quality Standards. Mitigation Measure 4.6.1~~1~~ through Mitigation Measure 4.6.15~~9~~ described in Section 4.6, Air Quality, of this EIR ~~the Air Quality Analysis for the Shipyard Sediment Project (Appendix G)~~ would ~~also~~ be required for the Convair Lagoon Alternative. Under this alternative, mitigation measures 4.6.1 through 4.6.15 would apply to all construction activities associated with the Convair Lagoon Alternative and would not be limited to dredging and dewatering activities at the Shipyard Sediment Project Site. Additionally, mitigation measure 5.10.3.1 would reduce impacts related to emissions of nitrogen oxides during the barge transfer of shipyard sediment to the CDF. The Convair Lagoon Alternative would not exceed the significant thresholds during any other phase of construction, or during operation; therefore, no mitigation measures are required for the other phases of construction or operational emissions.

Mitigation Measure 5.10.3.1: **Prohibit Tug Boat Idling**. The ~~applicant~~ contractor responsible for the tug boat operation shall ensure that tug boats not be allowed to idle during any barge loading and unloading activities, unless the tug boat is actively engaged in operations. Contract specifications shall be included in the construction documents, which shall be reviewed by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) prior to issuance of a construction permit. The San Diego Water Board shall verify implementation of this measure.

Threshold 5.10.3.4: Objectionable Odors. Implementation of Shipyard Sediment Site Mitigation Measure 4.6.15 ~~10~~ described in Section 4.6, Air Quality, of this EIR ~~the Air Quality Analysis for the Shipyard Sediment Project (Appendix G)~~ would require the application of a mixture of Simple Green and water (a ratio of 10:1) to the excavated sediment to the extent odor issues arise with respect to particular portions of the dredged material as part of odor management to accelerate the decomposition process and shorten the duration of odor emissions. Dewatering would take place in the same location as the Proposed Project; therefore, potential odor impacts as a result of the Convair Lagoon

Alternative are also expected to be less than significant due to the distance between the proposed dewatering pad areas from the nearest sensitive receptors (see Section 4.6, Air Quality for information about the proposed project). ~~However, similar to the Proposed Project, this impact would remain a temporary significant and unavoidable impact because it is difficult to predict the nature and duration of odor emissions from decomposition.~~

Cumulative Impacts

Threshold 5.10.3.1: Consistency with Applicable Air Quality Plans. The geographic context for the analysis of cumulative impacts relative to criteria air pollutants is the SDAB. The RAQS and SIP are intended to address cumulative impacts in the SDAB based on future growth predicted by SANDAG in the 2030 Regional Growth Forecast Update. SANDAG uses growth projections from the local jurisdictions' adopted general plans; therefore, development consistent with the applicable general plan would be generally consistent with the growth projections in the air quality plans. Cumulative development would generally not be expected to result in a significant impact in terms of conflicting with RAQS because the cumulative projects would be required to demonstrate that the proposed development is consistent with local planning documents. However, some projects would involve plan amendments that would exceed the growth assumptions in the planning document and RAQS. For example, the North Embarcadero Port Master Plan Amendment, listed in Table 5-8, Cumulative Projects in the Vicinity of the Convair Lagoon Alternative, is a Port Master Plan Amendment that proposes a variety of land uses changes. Therefore, cumulative development in the SDAB would have the potential to exceed the growth assumptions in the RAQS and result in a conflict with applicable air quality plans. The Convair Lagoon Alternative includes a PMPA amendment that would change the land uses over the 10-acre water portion of the site. However, the analysis of the PMPA, described above under Section 5.10.3.5.1, concluded that it would not exceed the SANDAG growth projections. Therefore, the Convair Lagoon Alternative would not result in a cumulatively considerable contribution to a potentially significant cumulative impact.

Threshold 5.10.3.2: Consistency with Air Quality Standards. The geographic context for the analysis of cumulative impacts relative to criteria air pollutants is the SDAB. As noted within Section 5.10.3.1.4, the SDAB is designated as being in non-attainment for PM_{10}, $PM_{2.5}$, and ozone. Therefore, the baseline cumulative impact to the SDAB due to air pollution from stationary and mobile source emissions associated with basin-wide polluting activities is significant.

The San Diego Water Board does not have thresholds for air quality standards; therefore, thresholds from the City of San Diego were considered. The City of San Diego recommends applying the CAAQS as the significance threshold for cumulative impacts where accepted methodology exists. However, the city has no accepted methodology nor has the District or the San Diego Water Board recommended a methodology for determining a project's impacts related to the CAAQS. However, the County of San Diego has adopted a methodology for addressing cumulative impacts in its Guidelines for Determining Significance – Air Quality, which will be used for this analysis. The County's cumulative impact methodology states that a project's construction emissions would be considered cumulatively considerable if the project would result in significant direct emissions of PM_{10}, $PM_{2.5}$, VOCs, or NO_x, or if the proposed project's emissions would combine with emissions from a nearby simultaneous construction project to exceed the direct impact significance thresholds for these pollutants. The significance thresholds for PM_{10}, $PM_{2.5}$, VOCs, and NO_x are listed in above in Table 5-12.

Based on the Localized Significance Thresholds (LST) established by the SCAQMD (SCAQMD, 2009), NO_X emissions decrease approximately 95 percent beyond approximately 675 meters (2,195 feet). Therefore, cumulative projects 2,195 feet from Convair Lagoon are excluded from the cumulative NO_x analysis. According to the LSTs, $PM_{2.5}$ and PM_{10} decrease approximately 95 percent by 500 meters (1,625 feet). SCAQMD has not established an LST for VOCs. However, VOCs disperse quickly (California Indoor Air Quality, 2011); therefore, it is assumed that VOC emissions would decrease by 95 percent beyond 500 meters, similar to PM_{10} and $PM_{2.5}$. Therefore, cumulative projects 1,625 feet from Convair Lagoon are excluded from the cumulative PM_{10}, $PM_{2.5}$, and VOC analysis. As a result, cumulative projects within 675 meters (2,195 feet) of Convair Lagoon are considered in the analysis of cumulative construction emissions. During operation, a project would result in a significant cumulative impact if it would conflict with the RAQS or SIP during operation, or exceed the significance thresholds listed in Table 5-12.

The projects that are located within 2,195 feet of the Convair Lagoon Site are the North Side - Airfield Project 5 and West Side - Ground Transportation Project 5 at the San Diego International Airport, the Teledyne Ryan Demolition Project, and the Sunroad Harbor Island Hotel. The cumulative projects would require the use of heavy construction equipment and truck trips throughout the duration of the construction that would result in emissions of NOx, VOCs, PM_{10}, and $PM_{2.5}$. The proposed Alternative's direct impact would exceed the significance threshold for NO_x during the sediment transport and placement phase. Therefore, the proposed Alternative, individually and in combination with the proposed cumulative projects, would result in cumulatively considerable NO_x emissions.

Two cumulative projects are located within 1,625 feet of the Convair Lagoon Site: the Teledyne Ryan Demolition Project and the Sunroad Harbor Island Hotel. As discussed in Section 5.10.3.5.2, Threshold 5.10.3.2, Consistency with Air Quality Standards, none of the phases of Alternative construction would exceed the significance thresholds for PM_{10}, $PM_{2.5}$, or VOCs. However, due to the heavy equipment and truck trips that would be required at the cumulative project sites, if construction of either project would occur simultaneously with the Convair Lagoon Alternative, PM_{10}, $PM_{2.5}$, and VOC emissions in the area between the sites, where emissions from both projects would combine, would have the potential to exceed the significance thresholds for PM_{10}, $PM_{2.5}$, or VOCs and result in a significant cumulative impact.

Shipyard Sediment Site Mitigation Measures 1 through 9 and mitigation measure 5.10.3.1 would reduce criteria pollutant emissions, but not to a level less than cumulatively considerable. Therefore, similar to the Proposed Project, the Convair Lagoon Alternative would result in a cumulatively considerable contribution to a significant cumulative construction impact related to emissions of PM_{10}, $PM_{2.5}$, VOC, and NO_x emissions.

As discussed in Section 5.10.3.5.2, Threshold 5.10.3.2, Consistency with Air Quality Standards, operational emissions associated with the Convair Lagoon Alternative would be negligible and would not violate any air quality standard. Additionally, as discussed in Section 5.10.3.5.1, Threshold 5.10.3.1, Consistency with Applicable Air Quality Plans, the Convair Lagoon Alternative would not conflict with the RAQS or the SIP. Therefore, the Convair Lagoon Alternative would comply with the applicable air quality standards and air quality plans. The potential air emissions associated with operation of the Convair Lagoon Alternative would not adversely impact the ability of the SDAB to meet the CAAQS and NAAQS. Therefore, the Convair Lagoon Alternative would not result in a cumulatively considerable operational contribution to the local cumulative impact area.

Threshold 5.10.3.3: Sensitive Receptors.

Carbon Monoxide Hotspots. The geographic context for the analysis of cumulative impacts relative to exposure of sensitive receptors to carbon monoxide hot spots would be the nearby intersections along Harbor Drive. The Convair Lagoon site and most of the cumulative projects listed in Table 5-8, Cumulative Projects in the Vicinity of the Convair Lagoon Alternative, would be located on or close to Harbor Drive. Therefore, cumulative project traffic would generally be concentrated on Harbor Drive. Implementation of the cumulative projects would have the potential to reduce intersection operations on Harbor Drive to an LOS D or worse. However, as discussed in Section 5.10.3.5.1, Threshold 5.10.3.3, Impact to Sensitive Receptors, the Convair Lagoon Alternative would only result in a temporary increase in traffic on Harbor Drive and would not contribute to long-term carbon monoxide levels. Similar to the Proposed Project, the Convair Lagoon Alternative would not result in a cumulatively considerable contribution to cumulative impact related to carbon monoxide hot spots.

Toxic Air Contaminants. The cumulative projects in the Convair Lagoon vicinity, listed in Table 5-8, Cumulative Projects in the Vicinity of the Convair Lagoon Alternative, include hotels and expansion of the Convention Center, which would require diesel truck trips to deliver supplies such as food for hotel restaurants. Expanded operational capacity at the airport may also result in an increase in truck trips. However, truck trips to hotel and convention center uses would be intermittent and would not substantially increase diesel particulate emissions. The airport improvements do include new gates, but generally consist of demolition of facilities and providing new access routes and parking facilities. These improvements would not substantially increase truck trips above existing conditions. Construction of the CDF and construction activities at the Shipyard Sediment Site would require diesel equipment and truck trips during construction only. Up to approximately a maximum of 100 daily truck trips would be required during construction at the Convair Lagoon and Shipyard Sediment Sites. However, construction emissions would be temporary and would not result in a long term increase in exposure to TAC emissions. Additionally, the

HRA prepared for the Proposed Project determined that a temporary increase of 100 daily truck trips would not exceed the SDAPCD criterion for cancer or chronic or acute health risks. Therefore, a cumulative impact to sensitive receptors from diesel particulate emissions would not occur.

Stationary sources of TAC emissions identified in CARB's Air Quality and Land Use Handbook (2005) are freeways, rail yards, ports, refineries, dry cleaners, and large gas dispensing facilities. Projects at the San Diego International Airport include expansion of a utility plant and co-generation facility. Several cumulative projects would also increase operations in the District, including the Commercial Fisheries Revitalization Plan and Port Pavilion on Broadway Pier Project. Therefore, the cumulative projects would have the potential to result in an increase in TAC emissions and a potentially significant cumulative impact would occur. However, the Convair Lagoon Alternative would consist of an undeveloped, above-ground parcel of land. It would not result in a new source of stationary TAC emissions. Therefore, the Convair Lagoon Alternative would not result in a cumulatively considerable contribution to a significant cumulative impact.

Threshold 5.10.3.4: Objectionable Odors. Similar to the Proposed Project, odors resulting from the treatment of decomposing sediments under the Convair Lagoon Alternative could result in temporary odor impacts. However, impacts relative to objectionable odors are limited to the area immediately surrounding the odor source and are not cumulative in nature because the air emissions that cause odors disperse beyond the their source. As the emissions disperse, the odor becomes less and less detectable. Additionally, as discussed above in Section 3.1.5.2, Threshold 5.10.3.4, Objectionable Odors, following construction the CDF would consist of undeveloped land and would not result in a source of odors. None of the proposed cumulative projects propose development that is a typical source of odor complaints. Therefore, the Convair Lagoon Alternative, in combination with other cumulative projects, would not result in a cumulatively significant impact associated with objectionable odors.

Level of Significance After Mitigation

No quantification for the emissions reduction associated with Mitigation Measures 1 through 9 is provided in the Air Quality Analysis for the Shipyard Sediment Project (Appendix G); however, these measures would minimize nitrogen oxide emissions by requiring the use of high-efficiency equipment, proper maintenance of equipment, shutting off engines when not in use, timing construction activities to not coincide with peak-hour traffic, and encouraging ridesharing and transit use. In addition, Mitigation Measure 5.10.3.1 would limit tug boat operation to four hours per day per tug boat. The maximum daily emissions during sediment transport and Shipyard Sediment Site construction activities with implementation of mitigation measure 5.10.3.1 are shown in Table 5-22. As shown in this table, implementation of mitigation measure 5.10.3.1 would reduce emissions of nitrogen oxides during Phase 4 of Convair Lagoon Alternative construction, but not to a less than significant level. Since it is unknown whether the Shipyard Sediment Site mitigation measures would reduce this impact to a less than significant level, this temporary impact would remain significant and unavoidable.

Table 5-22: Sediment Transfer Daily Maximum Emissions with Implementation of Mitigation Measure 5.10.3.1

Construction Phase	Pollutant Emissions (pounds/day)					
	CO	**NO_X**	**VOC**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Tug Boat Operations	61	325	13	5	10	10
Material Placement	35	40	7	0	3	2
Kettleman Hills Landfill Disposal Truck Trips	54	155	11	0	7	6
Dredging of Shipyard Sediment Site(1)	10	16	1	4	1	1
Landside Operations – Pad Construction	83	164	14	20	9	8
Landside Operations – Operation(1)	20	39	3	7	2	2
Covering Sediment Near Structures	31	105	6	4	4	4
Total Unmitigated Emissions	*294*	***844***	*55*	*40*	*36*	*33*
Reduction in Tug Boat Emissions from Implementation of Mitigation Measure 5.10.3.1	(- 31)	(-163)	(-7)	(-2)	(-5)	(-5)
Total Emissions with Mitigation Measure 5.10.3.1	*263*	***681***	*48*	*38*	*31*	*28*
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	**Yes**	No	No	No	No

Bold = Exceeds threshold
CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: URBEMIS, 2007, and LSA, 2011. See Appendix I for data sheets.

Similar to the Proposed Project, Shipyard Sediment Site Project Mitigation Measure 10 described in the Air Quality Analysis for the Shipyard Sediment Project (Appendix G) would reduce the duration of odor impacts.~~, but not to a less than significant level. This impact would be a temporarily significant and unavoidable.~~

Significant Unavoidable Adverse Impacts

Implementation of Mitigation Measures 1 though 10 described in the Air Quality Analysis for the Shipyard Sediment Project (Appendix G) and Mitigation Measure 5.10.3.1 for this alternative would reduce temporary impacts related to nitrogen oxide emissions and odors during Phase 4 of Convair Lagoon Alternative construction, but not to a less than significant level. These temporary impacts would be significant and unavoidable.

5.10.4 Biological Resources

This section evaluates the potential for biological resource impacts to occur from implementation of the Convair Lagoon Alternative. The term "biological resources" refers to marine plant and animal communities within the Convair Lagoon Alternative site. Potential impacts addressed in this section include direct and indirect impacts to sensitive plant and wildlife species, sensitive natural communities, wetlands, wildlife movement corridors, and conflicts with local policies or ordinances. This section incorporates information and analyses provided in the *Shipyard Sediment Alternative Analysis Convair Lagoon Confined Disposal Facility Alternative Marine Biological Resources Technical Report,* written by Merkel and Associates in May 2011. This report is provided as Appendix J of this EIR.

5.10.4.1 Existing Environmental Setting

Habitat Types

The Convair Lagoon Alternative site is located near the border of the north ecoregion and north-central ecoregion of the San Diego Bay. Four general types of habitats occur in the site:

- Upland (>+7.79 ft Mean Lower Low Water (MLLW))
- Intertidal (+7.79 to -2 ft MLLW)
- Shallow Subtidal (-2 to -12 ft MLLW)
- Moderately Deep and Deep Subtidal (below -12 ft MLLW)

Table 5-23 summarizes the acreage of these habitat types, and subhabitats, within the Convair Lagoon Alternative site. Figure 5-8 identifies the location of these habitats within the Convair Lagoon Alternative site. The various habitats described below include their approximate topographic location, which is generally expressed as above or below MLLW (approximately sea level).

Uplands. Upland habitats on the Convair Lagoon Alternative site are illustrated in Figure 5-8. Upland habitat generally occurs above the areas influenced by tidal action, or above +7.8 ft MLLW. The urban disturbed upland habitat in the Convair Lagoon Alternative site consists of man-modified features, such paved surfaces, concrete debris, and rip-rap revetment and accounts for approximately 0.64 acres. Disturbed uplands consist primarily of nonnative grasslands and disturbed, weedy areas, and account for approximately 0.46 acres. The majority of the native upland habitats that once occurred around San Diego Bay have long since been replaced by development.

Intertidal. Intertidal habitats on the Convair Lagoon Alternative site are illustrated in Figure 5-8. Subhabitats include intertidal beach, coastal salt marsh, intertidal flats and lower intertidal habitat.

Table 5-23: Habitat Types within the Convair Lagoon Alternative Site

Habitat Type	Acres
Upland (>+7.8 ft MLLW)	
Urban Disturbed (Man-Modified)	0.64
Disturbed Upland	0.46
Intertidal (+7.8 to -2 ft MLLW)	
Intertidal Beach (+7.8 to +2.3 ft MLLW)	0.83
Coastal Salt Marsh (+7.8 to +2.3 ft MLLW)	0.11
Intertidal Flats (+2.3 to 0 ft MLLW)	1.65
Lower Intertidal (0 to -2 ft MLLW)	1.42
Man Modified	1.12
Total (Non Man Modified)	4.01
Shallow Subtidal (-2 to -12 ft MLLW)	
Man Modified	0.19
Total (Non Man Modified)	4.49
Total Non-Man-Modified Habitat (Intertidal and Subtidal)	8.50
Moderately Deep and Deep Subtidal (below -12 ft MLLW)	0.31

Source: Merkel and Associates, 2011

Intertidal beach habitat occurs between the depths of +7.8 to +2.3 ft MLLW and generally occurs in the northeastern part of the site and covers approximately 0.83 acres. Coastal salt marsh habitat is composed of salt tolerant vegetation and occurs in the upper intertidal zone. Coastal salt marsh occurs between regular (daily) to irregular (less than daily) tidal inundation and is exposed more than inundated. Tidal circulation is the most important water source for the coastal salt marsh habitat and tides carry necessary nutrients into this habitat. Approximately 0.11 acres of coastal salt marsh habitat are present on site between the depths of +7.8 to +2.3 ft MLLW in the northeast and northcentral part of the site.

Intertidal flats include mudflats and sand flats and consist of various combinations of clay, silt, sand, shell fragments, and organic debris. The water levels on the intertidal flats are determined by the daily tidal cycles, which submerge or expose the surface approximately twice per day. Approximately 1.65 acres of intertidal flats are present on the site between the depths of +2.3 to 0 ft MLLW. Intertidal mudflats contain abundant organic matter and microorganisms, but not at the level found in eelgrass beds or salt marsh habitat. On the Convair Lagoon Alternative site, the lower intertidal zone is generally inundated for the majority of the day, and is only exposed during periods of extreme low tides. The substrate is similar to intertidal flats, and is considered the upper limit for eelgrass beds within San Diego Bay. Approximately 1.42 acres of lower intertidal habitat is present on the site between the depths of 0 to -2 ft MLLW, some of which supports eelgrass.

Shallow Subtidal. The majority of the open waters in the Convair Lagoon Alternative site are classified as shallow subtidal habitat. This habitat is defined as continually submerged shallow water habitat that extends from -2 to -12 ft MLLW. In San Diego Bay, shallow subtidal habitat supports an abundance of fish and bird abundance and diversity is higher in this habitat than in any other subtidal habitats in the bay, possibly due to the higher abundance of fish (INRMP, 2007). On the Convair Lagoon Alternative site, approximately 4.49 acres of shallow subtidal habitat is present.

Moderately Deep Subtidal. Moderately deep subtidal habitat on site occurs between the depths of -12 ft to -20 ft MLLW. Moderately deep subtidal habitat represents areas that generally have been dredged in the past but are not maintained as navigational channels. On the Convair Lagoon Alternative site, approximately 0.31 acres of moderately deep subtidal habitat is present.

Flora and Fauna

Eelgrass. Extensive eelgrass beds are present on the Convair Lagoon Alternative site, as shown in Figure 5-8. Eelgrass (*Zostera marina*) vegetated habitats are an essential component of southern California's coastal marine environment. Eelgrass beds function as important habitat for a variety of invertebrate, fish, and avian species. For many species, eelgrass beds are an essential biological habitat component for at least a portion of their life cycle, providing resting and feeding sites for avian species and nursery sites for numerous species of fish. On the Convair Lagoon Alternative site, eelgrass beds extend from +1 ft to -12 ft MLLW and cover approximately 5.64 acres. An additional 0.37 acres of eelgrass are located directly adjacent to the southern boundary of the Convair Lagoon Alternative site.

Vegetation. In addition to eelgrass, vegetation on site is represented by pickleweed (*Salicornia* spp.), saltbush (*Atriplex semibaccata*), salt grass (*Distichlis spicata*), as well as numerous weedy species characteristic of disturbed habitat.

Algae. Limited algal growth is present on the Covair Lagoon Alternative site with common algae found attached to artificial structures such as the existing pier and seaplane launch ramp. Algae species present on site include diatoms, blue-green algae, *Corallina pinnatifolia*, *Gelidium coulteri*, *Gelidium robustum*, *Laurencia pacifica*, *Sargassum muticum*, *Polisiphonia* sp., and sea lettuce (*Ulva* sp).

Fish. Rip-rap structures and seawalls within the San Diego Bay are known to attract and support a variety of fish. Rip-rap structures and seawalls within the San Diego Bay have also been reported as good lobster diving and sport fishing sites, as they provide refuge and feeding areas for certain juvenile and predator fishes, such as perches, basses, dogfish, opaleye, and croaker.

The Convair Lagoon Alternative is located between the north ecoregion and north-central ecoregion of the San Diego Bay. The last fish collection sampling for the north ecoregion and north-central ecoregion occurred in 2008. During this sampling, 33 fish species were found to occur in the north ecoregion of the San Diego Bay. Fish species with the greatest presence in numbers within the north ecoregion of the San Diego Bay included slough anchovy (*Anchoa delicatissima*), top smelt (*Atherinops affinis*), salema (*Xenistius californiensis*), arrow goby (*Clevelandia ios*), and giant kelpfish (*Heterostichus rostratus*). During the 2008 sampling for the north-central ecoregion, 27 species fish species were found to occur. Within the north-central ecoregion of the San Diego Bay, fish species with the greatest presence in numbers included slough anchovy, topsmelt, giant kelpfish, and bay pipefish (*Syngnathus leptorhynchus*).

In a 2011 field survey of the Convair Lagoon Alternative site by Merkel and Associates (Appendix J of this EIR), the round stingray (*Urobattus halleri*) was the only fish observed on site. However, other fish species such as barred and spotted sand bass (*Paralabrax nebulifer* and *P. maculatofasciatus*), and midshipman (*Porichthys myriaster*) are likely to use the Convair Lagoon Alternative site for habitat.

Birds. Between March 2006 and February 2007, avian surveys were conducted within San Diego Bay. One sampling point for this survey was located in the southeastern portion of the Convair Lagoon Alternative site, along the rip-rap/seawall. Forty-four bird species were observed at the Convair Lagoon Alternative site during this avian survey. Table 5-24 identifies these bird species. Only one of these species, the California least tern (*Sternula antillarum browni*), is listed as both state endangered and federal endangered.

Mammals. Marine mammal species known to regularly occur within the north San Diego Bay include the California sea lion (*Zalophus californianus*) and the coastal bottlenose dolphin (*Tursiops truncatus*). Species that are known to occasionally frequent the north channels of San Diego Bay include the Pacific harbor seal (*Phoca vitulina*) and the gray whale (*Eschrichtius robustus*). Convair Lagoon Alternative site is not considered a major seal or sea lion haul out area.

Other. Burrowing invertebrates, tube dwelling anemones, arthropods (e.g., ghost shrimp, *Callianassa*), and bivalves occur within the Convair Lagoon Alternative site, in areas of unvegetated, soft-bottom habitat. These species were found primarily on artifical structures, including rip-rap, concrete seawalls, the peir and the seaplane launch ramp. Invertebrates found within the Convair Lagoon Alternative site includecolonial tunicates (i.e., *Botryllus* sp.), oysters (*Ostrea lurida*), sponges (*Leucilla nuttingi*), mussels (*Mytilus* sp.), feather duster worms (Sabillidae), colonial ascidians (*Botrylloides* sp.), solitary tunicates (e.g., *Ciona* sp., *Styela plicata*), bryozoans (i.e., *Eurystomella* sp.), snails, crabs, polychaete worms, and the non-native bryozoan *Zoobotryon verticillatum*. Within the intertidal zone, barnacles

(*Chthamalus* spp., *Balanus* sp.) were the most common invertebrates on the bulkhead walls or rip-rap.

Table 5-24: Birds Observed at the Convair Lagoon Alternative Site during Falling and Peaking Tide from March 2006 to February 2007

Common Name	Scientific Name	Total
1. Western gull	*Larus occidentalis wymani*	172
2. Marbled godwit	*Limosa fedoa fedoa*	142
3. Least sandpiper	*Calidris minutilla*	114
4. Bufflehead	*Bucephala albeola*	45
5. Willet	*Tringa semipalmata inornatus*	44
6. Western grebe	*Aechmophorus occidentalis occidentalis*	37
7. Double-crested cormorant	*Phalacrocorax auritus*	30
8. Black-bellied plover	*Pluvialis squatarola*	21
9. Eared grebe	*Podiceps nigricollis californicus*	19
10. Surfbird	*Aphriza virgata*	17
11. Lesser scaup	*Aythya affinis*	16
12. Semipalmated plover	*Charadrius semipalmatus*	15
13. Mallard	*Anas platyrhynchos platyrhynchos*	12
14. Scaup sp.		11
15. Spotted sandpiper	*Actitis macularius*	10
16. Great blue heron	*Ardea herodias wardi*	9
17. Surf scoter	*Melanitta perspicillata*	9
18. Snowy egret	*Egretta thula thula*	6
19. Killdeer	*Charadrius vociferus vociferus*	5
20. Ruddy turnstone	*Arenaria interpres*	5
21. Belted kingfisher	*Ceryls alcyon*	5
22. Brown pelican	*Pelecanus occidentalis californicus*	4
23. Ring-billed gull	*Larus delawarensis*	4
24. Pied-billed grebe	*Podilymbus podiceps podiceps*	4
25. American crow	*Corvus brachyrhynchos hesperis*	3
26. Forster's tern	*Sterna forsteri*	3
27. Caspian tern	*Hydroprogne caspia*	3
28. Heermann's gull	*Larus heermanni*	3
29. Long-billed curlew	*Numenius americanus*	2
30. Mourning dove	*Zenaida macroura marginella*	2
31. California least tern	*Sternula antillarum browni*	2
32. Anna's hummingbird	*Calypte anna*	2
33. House finch	*Carpodacus mexicanus frontalis*	2
34. Sanderling	*Calidris alba*	2
35. European starling	*Sturnus vulgaris vulgaris*	2
36. Black phoebe	*Sayornis nigricans semiatra*	1
37. Common raven	*Corvus corax clarionensis*	1
38. Horned grebe	*Podiceps auritus cornutus*	1
39. European starling	*Sturnus vulgaris vulgaris*	1
40. Western sandpiper	*Calidris mauri*	1

Table 5-24: Birds Observed at the Convair Lagoon Alternative Site during Falling and Peaking Tide from March 2006 to February 2007

Common Name	Scientific Name	Total
41. Greater yellowlegs	*Tringa melanoleuca*	1
42. Northern mockingbird	*Mimus polyglottos polyglottos*	1
43. Ruddy duck	*Oxyura jamaicensis rubida*	1
44. Herring gull	*Larus argentatus smithsonianus*	1

Source: Merkel and Associates 2011

Exotic marine species are also present in San Diego Bay and potentially within the Convair Lagoon Alternative site. Exotic marine species have arrived in these areas through direct and indirect means, for intentional and unintentional purposes. Invasion risks stem from ballast water exchanges and hull fouling, as well as from aquarium, pet, nursery, aquaculture, and seafood industry trade. During the 1998 Regional Bight Survey of the San Diego Bay, the nonindigenous bivalve *Musculista senhousia* was present in more than 70 percent of the samples, making it the most widely distributed trawl caught invertebrate in the bay. *Musculista senhousia* together with another nonindigenous species *Microcosmus squamiger*, accounted for over 50 percent of the total catch. The green alga, *Caulerpa taxifolia*, has also been eradicated from several regional water bodies and may occur within the bay and the Convair Lagoon Alternative site.

Sensitive Species

Certain plants and animals have been listed as threatened or endangered under the state or federal Endangered Species Act. Other species have not been formally listed, but declining populations or habitat availability are reasons for concern in regard to their long-term viability. These species are included in lists compiled by resource management agencies or private conservation organizations. For the purposes of this EIR, “special status” species include those species that have been recognized by either federal or state resource management agencies or conservation organizations as having special management needs due to limited distribution, limited numbers, or significant population declines associated with natural or manmade causes. Special status species include those designated as endangered, threatened, rare, protected, sensitive, or species of special concern according to the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), or applicable regional plans, policies, or regulations. Special status plant and wildlife species that have the potential to occur on the Convair Lagoon Alternative site are discussed below.

California least terns. The California least tern (*Sternula antillarum browni*) is a state endangered and federal endangered species. California least terns were observed on the Convair Lagoon Alternative site during the 2006/2007 San Diego Bay avian survey. The closest nesting site for California least terns is located at the San Diego International Airport

(SDIA), approximately 0.25 miles north of Convair Lagoon Alternative site. These nesting areas include three sites that are protected with a seven-inch tall plastic fence to keep least tern chicks from wandering onto the taxiways. The nesting site is managed by the San Diego County Regional Airport Authority.

Colony size and reproductive success of the least tern located at the SDIA nesting site have varied widely from year to year depending on prey availability, predation and predator presence, and human disturbance. In 2010, at least 161 chicks from 88 nests hatched successfully at the SDIA nesting site. That same year, approximately 29 to 38 young fledged from the SDIA nesting site. Predators observed in the SDIA nesting area include ants, peregrine, kestrel, and raven. Possible predators include opossum, rats, raccoon, cat, great blue heron, night-heron, Cooper's hawk, gulls, barn owl, crow, and starlings.

The western snowy plover (*Charadrius alexandrinus nivosus*), a federally threatened subspecies, has not been observed at the Convair Lagoon Alternative site but was observed on the mudflats west of the nesting site at D Street Fill area in south San Diego Bay. The small sandy beach habitat on the Convair Lagoon Alternative site precludes extensive use of the site by the plover species, and none have been observed during past surveys.

The only turtle found in San Diego Bay is the east Pacific green sea turtle (*Chelonia mydas*), which is listed as endangered under the federal Endangered Species Act. The east Pacific green sea turtle does not breed or nest in San Diego Bay, and is associated with a breeding population on Islas Revillagigedos, Mexico. However, adults and juveniles have been sighted in the Bay, with individuals seen year round in the channel at the South Bay Power Plant, in the South Bay, and around Naval Air Base Coronado.

5.10.4.2 Regulatory Setting

Federal

Federal Endangered Species Act. The federal Endangered Species Act (ESA), administered by the USFWS, provides the legal framework for the listing and protection of species (and their habitats), which are identified as being endangered or threatened with extinction. Actions that jeopardize endangered or threatened species and the habitats upon which they rely are considered a "take" under the ESA. Section 9(a) of the ESA defines take as, "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Sections 10(a) and 7 of the federal ESA allow actions that could adversely affect endangered or threatened species to move forward, provided certain requirements are met.

Clean Water Act. Under section 404 of the Clean Water Act, the Army Corps of Engineers (ACOE) regulates the disposal of dredged and fill materials into "waters of the United States." Waters of the U.S. include intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, and wetlands adjacent to any water of the U.S. (CFR 33 Part 328). The ACOE also regulates navigable waters under section 10 of the Rivers and Harbors Act. A permit from the ACOE must be obtained for any dredge or fill activities within jurisdictional waters of the U.S. During the permit review process the ACOE determines the type of permit appropriate for the project based on the extent of impacts and type of fill activities.

In addition to the section 404 permit, section 401 of the Clean Water Act requires that a 404 permit applicant obtain a certificate from the appropriate state agency stating that the fill is consistent with the state's water quality standards and criteria. In California, the authority to grant certification or waive the requirement for permits under section 401 is delegated by the State Water Resource Control Board (State Water Board) to the Regional Water Quality Control Board (San Diego Water Board).

Migratory Bird Treaty Act. The Migratory Bird Treaty Act (MBTA) of 1918 (16 United States Code 703-711) implements an international treaty for the conservation and management of bird species that may migrate through more than one country. It is enforced in the United States by the USFWS, and makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) may be considered a "take" and is potentially punishable by fines and/or imprisonment. In 1972, the MBTA was amended to include protection for migratory birds of prey (raptors). Generally, applicants who obtain an ESA section 10(a) permit simultaneously receive a three-year MBTA permit for ESA listed migratory birds.

Magnuson-Stevens Fishery Conservation and Management Act. Under the provisions of the 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act, the amendments require the delineation of Essential Fish Habitat (EFH) for all managed species. EFH has been designated over all tidal marine waters in southern California. Federal action agencies which fund, permit, or carry out activities that may adversely impact EFH are required to consult with the National Marine Fisheries Service (NMFS) regarding the potential effects of their actions on EFH, and respond in writing to the NMFS's recommendations.

State

California Coastal Act. The California Coastal Act (CCA) provides for the protection of environmentally sensitive habitat identified by the CDFG from adjacent developments in the coastal zone. The Convair Lagoon Alternative site lies within the coastal zone. The CCA identifies environmentally sensitive habitat areas as any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments. The site is not considered an environmentally sensitive habitat area under the California Coastal act because habitats on site are too fragmented to support any listed species or species considered to be rare (M&A 2011). Section 30240 of the CCA provides protection for environmentally sensitive habitat areas, as stated:

"Environmentally sensitive habitat areas; adjacent developments:

- Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.
- Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas."

Compliance with these and other requirements in the CCA is ensured for specific development projects in the coastal zone through issuance of coastal development permits.

California Fish and Game (CFG) Code. The CFG Code regulates the taking or possession of birds, mammals, fish, amphibians, and reptiles, as well as natural resources such as wetlands and waters of the state. It includes the CESA (sections 2050-2115) and Streambed Alteration Agreement regulations (sections 1600-1616), which are both discussed in more detail below, as well as provisions for legal hunting and fishing, and tribal agreements for activities involving take of native wildlife. The CFG Code also includes protection of birds (sections 3500 *et seq*.) and the California Native Plant Protection Act (NPPA) of 1977 (sections 1900-1913), which directed CDFG to carry out the Legislature's intent to "preserve, protect and enhance rare and endangered plants in this state."

California Endangered Species Act. The California Endangered Species Act (CESA) authorizes the California Fish and Game Commission to designate endangered, threatened, and rare species and to regulate the taking of these species (sections 2050-2098, Fish and Game Code). CESA defines "endangered" species as those whose continued existence in California is jeopardized. State listed "threatened" species are those not presently threatened with extinction, but which may become endangered in the foreseeable future. Protection of special-status species is detailed in sections 2050 *et seq*. of the Fish and Game Code. The California Code of Regulations (Title 14, section 670.5) lists animal species considered endangered and threatened by the state. Title 14, section 670.2 of the California Code of Regulations lists plant species considered endangered and threatened by the state. Formal consultation must be initiated with the CDFG for projects that may have an adverse effect on a state-listed species.

Section 2080 of the California Fish and Game Code prohibits the taking of state listed plant and animals. The CDFG also designates "fully protected" or "protected" species as those that may not be taken or possessed without a permit from the Fish and Game Commission and/or the CDFG. Species designated as fully protected or protected may or may not be listed as endangered or threatened.

Lake and Streambed Alteration Program. Section 1602 of the CFG Code requires any person, state, or local governmental agency to provide advance written notification to CDFG prior to initiating any activity that would: 1) divert or obstruct the natural flow of, or substantially change or remove material from the bed, channel, or bank of any river, stream, or lake; or 2) result in the disposal or deposition of debris, waste, or other material into any river, stream, or lake. The state definition of "lakes, rivers, and streams" includes all rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life, and watercourses with surface or subsurface flows that support or have supported riparian vegetation.

Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Control Act provides for statewide coordination of water quality regulations. The Act established the State Water Board as the statewide authority and nine separate Regional Water Quality Control Boards to oversee smaller regional areas within the state. The Act authorizes the State Water Board to adopt, review, and revise policies for all waters of the state (including both surface and ground waters); and directs the Regional Water Quality Control Boards to develop regional Basin Plans. Section 13170 of the California Water Code also authorizes the State Water Board to adopt water quality control plans on its own initiative. The Basin Plan for the San Diego Region is designed to preserve and enhance the quality of water resources in the San Diego region for the benefit of present and future generations. The purpose of the plan is to designate beneficial uses of the Region's surface and ground waters, designate water quality objectives for the reasonable protection of those uses, and establish an implementation plan to achieve the objectives.

Regional

Southern California Eelgrass Mitigation Policy. The Southern California Eelgrass Mitigation Policy, adopted in 1991, offers specific guidelines for appropriate responses and mitigation measures for activities that threaten eelgrass vegetated habitats. This policy was developed by the federal and state resource agencies: NMFS, U.S. Army Corps of Engineers (ACOE), U.S. Fish and Wildlife Service (USFWS), and California Department of Fish and Game (CDFG). The Southern California Eelgrass Mitigation Policy requires pre- and post-construction surveys within 30 days of project commencement and completion. These surveys are then used to determine potential mitigation. The Southern California Eelgrass Mitigation Policy requires that impacts to eelgrass be mitigated by restoration at a 1.2:1 area ratio.

San Diego Bay Integrated Natural Resources Management Plan. The San Diego Bay Integrated Natural Resources Management Plan is a long-term strategy sponsored by two of the major managers of the San Diego Bay: the US Navy and the San Diego Unified Port District (District). Its intent is to provide direction for the good stewardship of natural resources, while also supporting the ability of the Navy and the District to meet their missions and continue functioning within the Bay. The ecosystem approach reflected in the Plan considers the interconnections among all of the natural resources and human uses of the Bay, across ownership and jurisdictional boundaries. San Diego Bay is viewed as an ecosystem rather than as a collection of individual species or sites or projects. The core strategies of the Plan are to: 1) manage and restore habitats, populations, and ecosystem processes; 2) plan and coordinate projects and activities so that they are compatible with natural resources; 3) improve information sharing, coordination and dissemination; 4) conduct research and long-term monitoring that supports decision-making; and 5) put in place a Stakeholder's Committee and Focus Subcommittees for collaborative, ecosystem-based problem-solving in pursuit of the goal and objectives.

5.10.4.3 Methodology

Biological resource information within the Convair Lagoon Alternative site is based on a recent habitat survey conducted by Merkel and Associated on March 29, 2011. The habitat survey also included a literature review for specific resources such as fish, avian species. Supplemental information was derived from the San Diego Bay Integrated Natural Resources Management Plan.

The ichthyofauna in San Diego Bay was previously studied by Merkel and Associates (2000) and other various researchers. The Shipyard Sediment Alternative Analysis Convair Lagoon Confined Disposal Facility Alternative Marine Biological Resources Technical Report (Appendix J) for the Convair Lagoon Alternative site made extensive use of a 1999 data set for the San Diego Bay regarding fish because the data set was both recent and comprehensive. Surveys used in the analysis were completed quarterly for five and a half years, at four stations throughout San Diego Bay, using six sampling gear types with a total of 78 species identified. Other research studies used in this analysis were used primarily to confirm the presence of fish species and to identify any additional species.

5.10.4.4 Thresholds of Significance

Threshold 5.10.4.1 : Candidate, Sensitive or Special Status Species. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant impact if it would substantially and adversely affect, either directly or through habitat modifications, any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS (including any flora or fauna of rare and/or endangered status, depleted or declining species, species and habitat types of unique or limited distribution, and/or visually prominent vegetation).

Threshold 5.10.4.2 : Riparian Habitat and Other Sensitive Communities. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant impact if it would result in a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFG or USFWS.

Threshold 5.10.4.3: Jurisdictional Waters. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant impact if it would result in a substantial adverse effect on federally protected wetlands as defined by section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means.

Threshold 5.10.4.4: Wildlife Movement Corridors. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant impact if it would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors; or impede the use of native wildlife nursery sites.

Threshold 5.10.4.5: Local Policies and Ordinances. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant impact if it would conflict with any local plans, policies or ordinances protecting biological resources or habitat conservation.

5.10.4.5 Impacts and Mitigation Measures

Less Than Significant Impacts

Threshold 5.10.4.4: Wildlife Movement Corridors. According to the USFWS, the entire California Coast, including San Diego Bay, is part of the Pacific Flyway (USFWS, 2010). The Pacific Flyway is one of four geographical patterns in the United States that represent the major migratory patterns of waterfowl through the continent. Flyway is a useful geographic term that describes four regions of the United States: Atlantic, Mississippi, Central and Pacific. Although migratory birds fly through many narrow migration corridors, the flyways fairly accurately represent the major north-south migration pathways. Implementation of the Convair Lagoon Alternative, which is located along the Pacific Flyway, would transform the entire existing marine habitat on site to upland habitat. The conversion of this habitat would alter the local circulation patterns of birds in the immediate vicinity of the site by reducing the amount of surface bay water available for foraging activities. However, this change in local circulation patterns from habitat alteration would not represent a significant impact because construction activities associated with the Convair Lagoon Alternative would not degrade water quality in the region to the extent that migrating wildlife would be negatively affected. Furthermore, the bay area surrounding the Convair Lagoon Alternative site contains a large presence of armored shoreline which is used by migrating birds. Implementation of the Convair Lagoon Alternative would not change any adjacent shorelines and migratory birds would continue to frequent these area. No significant impacts to wildlife movement corridors would occur from implementation of the Convair Lagoon Alternative. Refer to Section 4.5, ~~Marine~~ Biological Resources, of this EIR for impacts related to wildlife movement corridors from dredging and dewatering activities at the Shipyard Sediment Site.

Potentially Significant Impacts

Threshold 5.10.4.1: Candidate, Sensitive or Special Status Species. Direct impacts to candidate, sensitive or special status species include those associated with direct destruction or displacement of sensitive plants or natural habitats during construction activities such as excavation, placement of rock, placement of dredged sediment, installation of a sand cap and asphalt paving. Indirect impacts are those that are not a result of direct land disturbance activities. Indirect impacts include impacts such as decreased water quality, increased fugitive dust and noise, and increased human activity. Indirect impacts would occur during all stages of construction.

Construction of the Convair Lagoon Alternative would transform the entire existing on-site marine habitat to upland habitat. This conversion of marine habitat to upland habitat would result in the direct loss of small, less mobile marine species that use the Convair Lagoon Alternative site, such as invertebrates, algae and eelgrass. Larger and more mobile species may be able to avoid direct losses, but would be forced to relocate to surrounding habitats. Species required to relocate may be affected by an increased demand on resources in adjacent areas, as well as other development in the area. Impacts related to less mobile marine species, such as invertebrates and algae, are considered less than significant because these species are not identified as candidate, sensitive or special status by the CDFG or USFWS. Impacts to larger marine mammals and sea turtles are not considered significant because most are transitory in the vicinity of the Convair Lagoon Alternative site, and tracking data on sea turtles indicate that movement is limited to areas south of the Coronado Bridge. Impacts to eelgrass habitat are discussed below under Issue 2, Riparian Habitat and Other Sensitive Communities.

Of all the species with the potential to occur on the Convair Lagoon Alternative site, the California least tern is the only species that is considered a special status species.
The California least tern is listed as both a state and federal endangered species. California least terns were observed foraging on the Convair Lagoon Alternative site between March 2006 and February 2007 during a San Diego Bay avian survey. The closest nesting site to the lagoon was found located at the San Diego International Airport (SDIA), approximately 0.25 miles north of the Convair Lagoon Alternative site.

The conversion of marine habitat to upland habitat from implementation of the Convair Lagoon Alternative would not directly impact the California least tern because this species dwells on land, rather than a marine environment. However, the California least tern would have the potential to be indirectly impacted by construction activities associated with the placement of dredged materials and the construction of the sand cap. These construction activities would result in short-term increases in water turbidity within the vicinity of the Convair Lagoon Alternative site. Increased turbidity in this area would result in a reduction in foraging opportunities for the SDIA California least terns. This would be a significant impact. Refer to Section 4.5, ~~Marine~~ Biological Resources, of this EIR for impacts related to candidate, sensitive or special status species from dredging and dewatering activities at the Shipyard Sediment Site.

Threshold 5.10.4.2: Riparian Habitat and Other Sensitive Communities. Construction of the Convair Lagoon Alternative would transform the entire existing marine habitat on site to upland habitat. This conversion of habitat would result in a direct loss of eelgrass and would reduce the amount of available San Diego Bay surface water that is used by waterbirds for foraging. Direct impacts to eelgrass and San Diego Bay surface water are discussed separately below. Refer to Section 4.5, ~~Marine~~ Biological Resources, of this EIR for impacts related to riparian habitat or other sensitive communities from dredging and dewatering activities at the Shipyard Sediment Site.

There is no riparian habitat on the site, as identified by the CDFG or USFWS. Therefore, impacts to riparian habitat from implementation of the Convair Lagoon Alternative would be less than significant.

Construction of the Convair Lagoon Alternative has the potential to impact other sensitive natural communities in the site vicinity from bottom disturbance activities that could result in the spread of invasive species. The ecological ramifications of exotic species to sensitive communities off site could range from minor to very significant, depending on local conditions and natural competition. One species that would have significant local impacts to sensitive communities in the site vicinity includes the green alga *Caulerpa taxifolia*, which has been eradicated from several regional water bodies. Without implementation of a survey for invasive seaweeds in the genus *Caulerpa* prior to construction, construction of the Convair Lagoon Alternative could result in the spread of invasive species, which would result in a significant impact to sensitive natural communities.

Eelgrass Loss. Eelgrass vegetated areas are recognized as important ecological communities in shallow bays and estuaries because of their multiple biological and physical values. Eelgrass habitat functions as an important structural environment for resident bay and estuarine species, offering both predation refuge and a food source. Eelgrass functions as a nursery area for many commercially and recreational important finfish and shellfish species, including those that are resident within bays and estuaries, as well as oceanic species that enter estuaries to breed or spawn. Eelgrass also provides a unique habitat that supports a high diversity of non-commercially important species whose ecological roles are less well understood.

Eelgrass is also a major food source in nearshore marine systems, contributing to the system at multiple trophic levels. Eelgrass provides the greatest amount of primary production of any nearshore marine ecosystem, forming the base of food webs and providing a food source for organisms that feed directly on eelgrass leaves, such as migrating waterfowl. Eelgrass is also a source of secondary production, supporting epiphytic plants, animals, and microbial organisms that are grazed upon by other invertebrates, larval and juvenile fish, and birds.

In addition to habitat and resource attributes, eelgrass serves beneficial physical roles in bays and estuaries. Eelgrass beds dampen wave and current action, trap suspended particulates, and reduce erosion by stabilizing the sediment. They also improve water clarity, cycle nutrients, and generate oxygen during daylight hours (NOAA, 2005).

Implementation of the Convair Lagoon Alternative would transform the entire existing marine habitat on site to upland habitat. As shown in Figure 5-9, this conversion of habitat would result in a direct loss of approximately 5.64 acres of eelgrass. An additional 0.37 acres of eelgrass is located adjacent to the Convair Lagoon Alternative site and could be indirectly impacted from sediment turbidity during construction of the containment barrier, placement of fill and installation of the sand cap. In total, approximately 6.01 acres of eelgrass would be significantly impacted by implementation of the Convair Lagoon Alternative. Direct and indirect impacts to eelgrass from implementation of the Convair Lagoon Alternative would be a significant impact.

The loss of eelgrass is protected under the Southern California Eelgrass Mitigation Policy. Compliance with the Southern California Eelgrass Mitigation Policy is discussed below under Issue 5, Local Policies and Ordinances.

Bay Surface Loss. The majority of the existing Convair Lagoon Alternative site is San Diego Bay surface water. Within the bay area of the site, four marine habitats occur: 1) Disturbed Upland; 2) Intertidal; 3) Shallow Subtidal and 4) Moderately Deep and Deep Subtidal. Implementation of the Convair Lagoon Alternative would convert all existing marine habitats on site to upland habitat and would reduce the amount of surface water present within the San Diego Bay as a whole. Impacts to the marine habitats within the Convair Lagoon Alternative site are described individually below.

Upland. As shown in Table 5-23, approximately 1.1 acres of upland habitat currently exists on the Convair Lagoon Alternative site. The disturbed upland area consists primarily of bare soil, man-modified or the rip-rap shoreline above the highest high tide line, and paved surfaces. Sparse weedy vegetation occurs along this upland fringe between the existing property line and shore. Implementation of the Convair Lagoon Alternative would convert all 1.10 acres of the existing disturbed upland habitat to an above ground, undeveloped, paved parcel of upland habitat with no structures. Disturbed upland habitat is not considered sensitive or biologically important and this modification of habitat would not substantively alter the existing biology of the site. Additionally, the construction of the containment barrier would result in the creation of some upland habitat, as shown in Figure 5-9. Therefore, impacts to disturbed upland habitat would be less than significant.

Intertidal. As shown in Table 5-23, approximately 4.01 acres of non-man modified intertidal habitat, including 0.11 acres of salt marsh habitat, occurs on the Convair Lagoon Alternative site. Implementation of the Convair Lagoon Alternative would result in the direct loss of all 4.01 acres of intertidal habitat, including coastal salt marsh, from the placement of dredge sediment, installation of a sand cap, and asphalt paving. Although some intertidal habitat would be created from the construction of the containment barrier, as shown in Figure 5-9, the direct loss of intertidal habitat would be considered significant due to the presence of eelgrass within this habitat, which is considered an important ecological community and is protected under the Southern California Eelgrass Mitigation Policy. Additionally, intertidal habitats are preferentially used by shorebirds, wading birds, and some diving birds and waterfowl. Finally San Diego Bay is facing a declining trend in marsh and intertidal habitat. Therefore, the direct loss of intertidal habitat from implementation of the Convair Lagoon Alternative site would be a significant impact.

Shallow Subtidal. As shown in Table 5-23, approximately 4.49 acres of shallow subtidal habitat is present on the Convair Lagoon Alternative site. The shallow subtidal habitat includes the existing rip-rap and seawalls on site. The presence of these hard, heterogeneous substrates creates habitat for a diverse assemblage of marine fauna and flora. Implementation of the Convair Lagoon Alternative would result in the direct loss of all 4.49 acres of this shallow subtidal habitat, including 0.19 acres of man-modified shallow subtidal habitat through the placement of dredge sediments, installation of a sand cap, and asphalt paving. Although some intertidal habitat would be created from the construction of the containment barrier, as shown in Figure 5-9, the direct loss of shallow subtidal habitat would be considered significant due to the presence of eelgrass within this habitat, which is considered an important ecological community and is protected under the Southern California Eelgrass Mitigation Policy. The direct loss of man modified shallow subtidal habitat would also be considered a significant impact due to the high value of this habitat type. In addition, the San Diego Bay is facing a declining trend in shallow subtidal habitat. Therefore, the direct loss of shallow subtidal habitat from implementation of the Convair Lagoon Alternative site would be a significant impact.

Moderately Deep and Deep Subtidal. As shown in Table 5-23, approximately 0.31 acres of moderately deep and deep subtidal habitat are present on the Convair Lagoon Alternative site. Implementation of the Convair Lagoon Alternative would result in the direct loss of 0.31 acres of this habitat from the placement of dredge, installation of a sand cap, and asphalt paving. This direct loss of habitat would not be considered significant due to the relative abundance of moderately deep subtidal habitat within San Diego Bay and that this direct loss represents a very small amount (approximately 0.01 percent) of moderately deep and deep subtidal habitat within the Bay.

Threshold 5.10.4.3: Jurisdictional Waters. Waterways, water bodies and wetlands are protected by the Clean Water Act. Specifically, small streams that feed into larger streams, rivers, bays and coastal waters are protected under the Clean Water Act. Additionally, wetlands that filter pollution and help protect communities from flooding are also protected under the Clean Water Act. Discharging pollution or filling protected waters (jurisdictional waters) or wetlands requires a permit from the ACOE. According to the *Marine Biological Resources Technical Report for the Convair Lagoon Site,* written by Merkel and Associates and included as Appendix J of this EIR, 9.85 acres of jurisdictional waters are present on the Convair Lagoon Alternative site and protected under the Clean Water Act. Implementation of the Convair Lagoon Alternative would result in direct impacts to all 9.85 acres of jurisdictional waters from construction activities that would result in the conversion of marine habitat to upland habitat. Direct impacts to jurisdictional waters would be a significant impact. Refer to Section 4.5, ~~Marine~~ Biological Resources, of this EIR for impacts related to jurisdictional waters from dredging and dewatering activities at the Shipyard Sediment Site.

Threshold 5.10.4.5: Local Policies and Ordinances. Local biological resource policies and ordinances relevant to the Convair Lagoon Alternative include the Port Master Plan, the Southern California Eelgrass Mitigation Policy and the Magnuson-Stevens Fishery Conservation and Management Act. Consistency with these policies is discussed below. The Convair Lagoon Alternative site is not subject to the local ordinances in the city of San Diego because the project site is within the jurisdiction of the District, and outside the jurisdiction of the City of San Diego. Refer to Section 4.5, ~~Marine~~ Biological Resources, of this EIR for impacts related to conflicts with local policies and ordinances from dredging and dewatering activities at the Shipyard Sediment Site.

Port Master Plan. The District has established goals to protect, preserve, and enhance natural resources in San Diego Bay in section II of the Port Master Plan (PMP), Planning Goals. Applicable PMP Planning Goals within section II include Goal V, Goal VII, Goal VIII, Goal X and Goal XI. Consistency with these plans are described below.

Southern California Eelgrass Mitigation Policy. The Southern California Eelgrass Mitigation Policy offers specific guidelines and mitigation measures for activities that threaten eelgrass vegetated habitats. Approximately 5.64 acres of eelgrass would be directly lost from construction of the Convair Lagoon Alternative. An additional 0.37 acres of eelgrass is located adjacent to the project site and has the potential to be indirectly impacted from sediment turbidity during construction activities. In total, approximately 6.01 acres of eelgrass would be impacted by implementation of the Convair Lagoon Alternative. This direct loss represents a conflict with the Southern California Eelgrass Mitigation Policy. This conflict would be a significant impact and is also identified above under Issue 2 for the loss of eelgrass.

Port Master Plan, Section II Applicable Goals	Convair Lagoon Alternative Consistency Evaluation
Goal V. The District will take particular interest in and exercise extra caution in those uses or modifications of the bay and tidelands, which constitute irreversible action of loss of control. 1. Bay fills, dredging and the granting of long-term leases will be taken only when substantial public benefit is derived.	The Convair Lagoon Alternative would permanently convert 10 acres of water to upland habitat. The 10 acres of land would remain under District control and would be designated as Harbor Services (land) use under the PMP. Although the site would be permanently converted from water to land, the site would continue to be under the control of the District and designated as Harbor Services in the PMP, which identifies areas devoted to maritime services and harbor regulatory activities of the District. The alternative would require filling a portion of the bay. However, this action is consistent with this goal because implementation of the Convair Lagoon Alternative would protect the quality of the waters of San Diego Bay for use and enjoyment by the people of the state through execution of a contaminated sediment cleanup project consistent with the provisions of Tentative CAO No. R9-2011-0001. This CAO was issued to minimize adverse effects to several beneficial uses identified for San Diego Bay. These include: Chapter 3 Aquatic life beneficial uses, including Estuaring Habitat (EST), Marine Habitat (MAR), and Migration of Aquatic Organisms (MIGR). Chapter 4 Aquatic-dependent wildlife beneficial uses, including Wildlife Habitat (WILD), Preservation of Biological Habitats of Special Significance (BIOL), and Rare, Threatened, or Endangered Species (RARE). Chapter 5 Human health beneficial uses, including Contact Water Recreation (REC-1), Non-contact Water Recreation (REC-2), Shellfish Harvesting, and Commercial and Sport Fishing (COMM). The Convair Lagoon Alternative would therefore provide substantial public benefit by facilitating a contaminated sediment cleanup project and would not conflict with Section II PMP Goal V.
Goal VII. The District will remain sensitive to the needs, and cooperate with adjacent communities and other appropriate governmental agencies in bay and tideland development.	As discussed in Section, 5.10.10, Land/Water Compatibility, the conversion of the Convair Lagoon Alternative site from water to land is consistent with the surrounding community use because the surrounding lands are industrial in nature and an undeveloped, paved lot would therefore result in a compatible land use. Additionally, the District has coordinated with the San Diego Water Board, and other appropriate governmental agencies with regard to the design and planning of the Convair Lagoon Alternative. For each issue analyzed in Chapter 5.10, potential substantial adverse environmental impacts are identified and mitigation measures are provided to minimize these impacts to the extent feasible. No disproportionate impacts to adjacent jurisdictions would occur from implementation of the alternative. Therefore, the Convair Lagoon Alternative would not conflict with Section II PMP Goal VII.
Goal VIII. The District will enhance and maintain the Bay and Tidelands as an attractive physical and biological entity. 1. Each activity, development and construction should be designed to best facilitate its particular function, which function should be integrated with and related to the site and surroundings of that activity. 2. Views should be enhanced through view corridors, the preservation of panoramoas, accentuation of vistas, and shielding of the incongruous and inconsistent. 3. Establish guidelines and standards	Approximately three-quarters of the water area associated with the Convair Lagoon Alternative site currently functions as a remediation site for contaminated sediment and is not considered an attractive physical or biological entity because the habitats on site are too fragmented to support any listed species or species considered to be rare and the site is not considered an environmentally sensitive habitat area under the California Coastal Act (M&A, 2011). Implementation of the alternative would continue the existing function of the site for remediation use. In addition, as described in Section 5.10.10, Land Use, this alternative land use would be compatible with existing Port Master Plan adjacent designated land uses. As described in Section 5.10.11, Other Environmental Issues, implementation of the Convair Lagoon Alternative would not impact any existing view corridors, conflict with the visual character of the community or result in excessive operational noise. As

Port Master Plan, Section II Applicable Goals	Convair Lagoon Alternative Consistency Evaluation
facilitating the retention and development of an aesthetically pleasing tideland environment free of noxious odors, excessive noise and hazards to the health and welfare of the people of California.	described in Section 5.10.3, Air Quality, implementation of the Convair Lagoon Alternative would not result in significant noxious odor impacts. Additionally, implementation of the Convair Lagoon Alternative would reduce hazards to the health and welfare of the people of California by protecting the quality of the waters of San Diego Bay for use and enjoyment by the people of the state through execution of a contaminated sediment cleanup project consistent with the provisions of Tentative CAO No. R9-2011-0001. Therefore, the Convair Lagoon Alternative would not conflict with PMP Goal VIII.
Goal X. The quality of water in San Diego Bay will be maintained at such a level as will permit human water contact activities.	Implementation of the Convair Lagoon Alternative would protect the quality of the waters of San Diego Bay for use and enjoyment by the people of the state by implementing a contaminated sediment cleanup project consistent with the provisions of Tentative CAO No. R9-2011-0001 and the improvement of several beneficial uses listed above regarding consistency with Goal V of the PMP. Additionally, implementation of the Convair Lagoon Alternative would not result in unmitigated water quality impacts that would prevent human water contact activities. Refer to Section 5.10.9, Hydrology and Water Quality, for a full analysis of water quality impacts related to implementation of the Convair Lagoon Alternative. Therefore, the Convair Lagoon Alternative would not conflict with PMP Goal X.
Goal XI. The District will protect, preserve and enhance natural resources, including natural plant and animal life in the Bay as a desirable amenity, and ecological necessity, and a valuable and usable resource.	Approximately three-quarters of the water area associated with the Convair Lagoon Alternative site is currently used for remediation and monitoring activities and is not considered a desirable ecological amenity or resource because the habitats on site are too fragmented to support any listed species or species considered to be rare and the site is not considered an environmentally sensitive habitat area under the California Coastal Act (M&A, 2011). Although eelgrass is present on the site, implementation of mitigation measures 5.10.4.1 through 5.10.4.4 would off-set the loss of this habitat by creating similar habitat in an alternative location. Implementation of the Convair Lagoon Alternative would continue the site use for remediation and any impacts to natural resources from implementation of the Convair Lagoon Alternative, including plants and animals, would be mitigated to a level below significant with implementation of mitigation measures 5.10.4.1 through 5.10.4.4. Implementation of specified mitigation measures would minimize harmful effects to coastal resources and waters. Additionally, the Convair Lagoon Alternative is not located in PMP Planning Districts 7, 8, or 9, which contain areas identified for conservation purposes by the District. Finally, this alternative would implement Tentative CAO No. R9-2011-0001. This CAO was issued to minimize adverse effects to several beneficial uses identified for San Diego Bay. These include: iii. Aquatic life beneficial uses, including Estuaring Habitat (EST), Marine Habitat (MAR), and Migration of Aquatic Organisms (MIGR). iv. Aquatic-dependent wildlife beneficial uses, including Wildlife Habitat (WILD), Preservation of Biological Habitats of Special Significance (BIOL), and Rare, Threatened, or Endangered Species (RARE). Therefore, the Convair Lagoon Alternative would not conflict with Goal XI of the PMP.

Magnuson-Stevens Fishery Conservation and Management Act. The Magnuson-Stevens Fishery Conservation and Management Act require the delineation and preservation of Essential Fish Habitat for all managed species. Within the Convair Lagoon Alternative site, on-site rip-rap is considered Essential Fish Habitat. Implementation of the Convair Lagoon Alternative would result in the direct loss of approximately 0.19 acres of this Essential Fish Habitat. However, this loss would be offset by the construction of the containment barrier jetty, which would create approximately 0.39 acres of similar habitat. The construction of the containment jetty would result in an additional 0.20 acres of subtidal man-made habitat on the site, which would reduce impacts to less than significant.

Mitigation Measures

The following mitigation measures are required to reduce significant direct and indirect impacts to the California least tern, eelgrass habitats, jurisdictional waters and San Diego Bay surface water to a level below significance. The measures are organized to correlate to the various significant impacts identified above by issue area. In addition to the mitigation measures identified below, the Convair Lagoon Alternative would be required to implement mitigation measures 4.5.1 through 4.5.11, listed in Section 4.5, Biological Resources, of this EIR. Under this alternative, mitigation measures 4.5.2 through 4.5.9 would be applied to all construction activities associated with the Convair Lagoon Alternative and would not be limited to the dredging and dewatering activities at the Shipyard Sediment Project Site.

Threshold 5.10.4.1: Candidate, Sensitive or Special Status Species Indirect Impacts

Mitigation Measure 5.10.4.1: **California Least Tern.** In order to reduce increases in water turbidity which may affect foraging opportunities for the California least tern, the construction contractor shall implement mitigation measures 5.10.9.1 through 5.10.9.1.5 found in Section 5.10.9, Hydrology and Water Quality, of this EIR.

Threshold 5.10.4.2, 5.10.4.3, and 5.10.4.5: Invasive Species, Eelgrass & Bay Surface Water; Jurisdictional Waters; Local Policies and Ordinances

Mitigation Measure 5.10.4.2: Prior to the start of any phase of construction, a pre-construction survey for the invasive alga, *Caulerpa taxifolia,* shall be performed by a certified Caulerpa surveyor, ~~qualified biologist~~ retained by the construction contractor. The survey shall be completed during the high growth period of *Caulerpa taxifolia*, March 1st though October 31st. Surveys outside the high growth period shall be allowed on a case-by-case basis by the appropriate regulatory agency in consultation with NMFS and CDFG. The~~is~~ survey shall be conducted in conformance with the

Caulerpa Control Protocol version 3 (National Marine Fisheries Service 2007), prior to any bottom disturbing events, and shall be submitted to the National Oceanic and Atmospheric Administration (NOAA) Fisheries/CDFG Contacts within 15 days of survey completion. ~~If *Caulerpa taxifolia* is not found, then construction can proceed.~~ The following survey conditions shall be followed, but not limited to:

1. Prior to initiation of any permitted Disturbing Activity, a pre-construction survey of the project Area of Potential Effect (APE) shall be conducted to determine the presence or absence of *Caulerpa*. Survey work shall be completed not earlier than 90 days prior to construction and not later than 30 days prior to construction.
2. In the event that *Caulerpa* is detected, construction shall not be conducted until such time as the infestation has been isolated, treated or the risk of spread from the proposed construction is eliminated in accordance with *Caulerpa* Control Protocol version 3 (National Marine Fisheries Service 2007).

If *Caulerpa taxifolia* is not found during the above survey, then construction can proceed, as approved by NOAA Fisheries/CDFG Contacts. If *Caulerpa taxifolia* is found during the survey, the following measures shall be followed:

1. NOAA Fisheries/CDFG Contacts shall be notified within 24 hours of the discovery.

2. All *Caulerpa taxifolia* assessment and treatment shall be conducted under the auspices of the CDFG and NOAA Fisheries as the state and federal lead agencies for implementation of *Caulerpa* eradication in California.

3. Within 96 hours of NOAA Fisheries/CDFG Contact notification, the extent of the *Caulerpa* infestation within the project site shall be fully documented. *Caulerpa taxifolia* eradication activities shall be undertaken using the best available technologies at the time and will depend upon the specific circumstances of the infestation. Eradication

activities may include in situ treatment using contained chlorine applications, and may also incorporate mechanical removal methods. The eradication technique is subject to change at the discretion of NOAA Fisheries and CDFG and as technologies are refined.

4. The efficacy of treatment shall be determined prior to proceeding with permitted activities. To determine effectiveness of the treatment efforts, a written Sampling and Analysis Plan (SAP) shall be prepared. The plan shall be developed in conjunction with the CDFG and NOAA Fisheries and shall be approved by these agencies prior to implementation.

5. The San Diego Water Board shall verify implementation of this mitigation measure.

~~If it is found, then the following shall be undertaken by the project applicant to eradicate this species in the construction area prior to beginning any bottom disturbing activities, including but not limited to:~~

~~a) The disturbing activity shall not be conducted until such time as the infestation has been isolated, treated or the risk of spread from the proposed disturbing activity is eliminated;~~

~~b) National Oceanic and Atmospheric Administration (NOAA) Fisheries/CDFG Contacts shall be notified within 24 hours of the discovery;~~

~~c) Within 96 hours of notification, the extent of the *Caulerpa* infestation within the site APE shall be fully documented. *Caulerpa* eradication activities shall be undertaken using the best available technologies at the time and will depend upon the specific circumstances of the infestation. This activity may include in situ treatment using contained chlorine applications, and may also incorporate mechanical removal methods. The eradication technique is subject to change at the discretion of NOAA Fisheries and CDFG and as technologies are refined.~~

Mitigation Measure 5.10.4.3: **Eelgrass and Local Policy Conflicts.** For direct and indirect eelgrass impacts at Convair Lagoon, and in accordance with the current Southern California Eelgrass Mitigation Policy SCEMP), approximately 7.22 acres of eelgrass shall be replaced by the construction contractor and a qualified biologist through a transplant method to achieve a 1.2:1 replacement ratio for the loss of 6.01 acres of existing eelgrass, through the following methods. Prior to implementation of these methods, a pre-construction mapping survey must be completed during the active growth phase for the vegetation (typically March through October) and shall be valid for a period of 60 days with the exception of surveys completed in August–October. Surveys completed after unusual climatic events (i.e., high rainfall) may have modified requirements and surveyors should contact NMFS, CDFG, and USFWS to determine if any modifications to the standard survey procedures will be required. A survey completed in August–October shall be valid until the resumption of active growth (i.e., in most instances, March 1) in accordance with the Southern California Eelgrass Mitigation Policy (SCEMP) (National Marine Fisheries Service [NMFS], 1991 as amended) to document the amount of eelgrass that will likely be affected by dredging activity. A post-construction survey shall be conducted by a qualified biologist, retained by the construction contractor, within 30 days of project commencement and completion. These surveys shall be used to determine specific mitigation:

a) A Final eelgrass mitigation plan shall be prepared and approved by the ACOE, acting in conjunction with the resource agencies, including the San Diego Water Board, NMFS, USFWS, EPA and the CDFG. The results of the pre-construction survey shall be integrated into a Final Eelgrass Mitigation Plan for the project and used to calculate the amount of eelgrass to be mitigated. The plan shall include details and descriptions regarding the chosen mitigation site, transplant methods, program schedule, 5-year monitoring program, success criteria, and actions to undertake for failed mitigation goals, consistent with the SCEMP. Transplantation of eelgrass shall occur only with the written approval of the CDFG.

b) Mitigation methods for eelgrass shall include creating eelgrass habitat at one or more locations within the San

Diego Bay by raising the bay floor elevation to approximately -5 ft MLLW with dredged materials and planting eelgrass on the elevated plateau. Replacement mitigation for eelgrass may occur in one or more of the following locations, as approved by the resource agencies NMFS, USFWS, EPA, CDFG and ACOE: 1) Naval Training Center (NTC) channel; 2) Harbor Island – West Basin; 3) Adjacent to Convair Lagoon; 4) A-8 Anchorage; 4) South Bay Borrow Site; 5) South Bay Power Plant Channel; 6) South Bay Power Plant; and 7) Emory Cove Channel. Brief descriptions of these potential mitigation sites are described in Table 5-25 below.

c) The post-construction eelgrass survey shall be submitted to the NMFS, USFWS, CDFG, and the Executive Director of the California Coastal Commission, as well as the San Diego Water Board. ~~An eelgrass mitigation plan shall be prepared and approved by the ACOE, acting in conjunction with the resource agencies, including NMFS, USFWS, EPA, and the CDFG. The plan shall include details and descriptions regarding the chosen mitigation site, transplant methods, program schedule, 5-year monitoring program, success criteria, and actions to undertake for failed mitigation goals, consistent with the Southern California Eelgrass Mitigation Policy. Transplantation of eelgrass shall occur only with the written approval of the CDFG.~~

d) Criteria for determination of transplant success at the selected mitigation site shall be based upon a comparison of vegetation coverage (area) and density (turions[4] per square meter) between the adjusted impact area (original impact area multiplied by 1.2 or the amount of eelgrass habitat to be successfully mitigated at the end of 5 years) and the mitigation site(s). The extent of vegetated cover is defined as that area where eelgrass is present and where gaps in coverage are less than 1 meter between individual turion clusters. Density of shoots is defined by the number of turions per area present in representative samples within the original impact area, control, or transplant bed. Specific criteria are as follows:

[4] A turion is a specialized overwintering bud produced by aquatic herbs.

- The mitigation site shall achieve a minimum of 70 percent area of eelgrass and 30 percent density as compared to the adjusted project impact area after the first year.
- The mitigation site shall achieve a minimum of 85 percent area of eelgrass and 70 percent density as compared to the adjusted project impact area after the second year.
- The mitigation site shall achieve a sustained 100 percent area of eelgrass bed and at least 85 percent density as compared to the adjusted project impact area for the third, fourth, and fifth years.
- The final determined amount of eelgrass to be transplanted shall be based upon the guidelines in the SCEMP. If remedial transplants at the project site are unsuccessful, then eelgrass mitigation shall be pursued at the secondary eelgrass transplant location.
- The San Diego Water Board shall verify implementation of this mitigation measure.

Table 5-25: Potential Mitigation Sites for Eelgrass Loss

Potential Eelgrass Mitigation Site	Description
Former Naval Training Center Channel	The former Naval Training Center (NTC) Channel is located north of North Harbor Drive Boulevard. The channel extends approximately 1 mile and covers approximately 54 acres. The sides of the NTC channel consist of rip-rap, and the majority of the substrate consists of soft bay muds. The average depth of the channel is approximately -12 to -14 ft MLLW; however, the edges of the channel are shallow and support extensive eelgrass beds. Common fauna associated with shallow bay mud habitat include tube dwelling anemones, arthropods (e.g., ghost shrimp, *Callianassa*), round stingray (*Urobatis halleri*), barred and spotted sand bass (*Paralabrax nebulifer* and *P. maculatofasciatus*), and midshipman (*Porichthys myriaster*). However, this mitigation site would accomplish only part of the 7.22 mitigation requirement, due to a navigational hazard constraint that would occur from narrowing the navigational NTC channel.
Harbor Island – West Basin	The west basin of Harbor Island habitat includes shoreline stabilized with rip-rap and adjacent subtidal bay mud habitat. The average depth within the basin is approximately -10 to -12 ft MLLW, with extensive eelgrass beds in the northern portion and marina development along the south and eastern portions of the basin. The placement of suitable dredge material at the Harbor Island – West Basin could be designed to accommodate eelgrass habitat (to -5 ft MLLW). However, this mitigation site would likely accomplish only part of the 7.22 mitigation requirement, due to navigational hazard constraints that would occur from narrowing the navigational channel associated with Harbor Island West Marina.
Adjacent to Convair	Adjacent to Convair Lagoon, the habitat area includes shoreline stabilized with rip-rap and

Table 5-25: Potential Mitigation Sites for Eelgrass Loss

Potential Eelgrass Mitigation Site	Description
Lagoon	adjacent subtidal bay mud habitat. The average depth in the area is approximately -10 to -12 ft MLLW, with eelgrass beds just offshore of the Coast Guard facility, and patchy eelgrass located further offshore. The placement of suitable dredge material could be designed to accommodate eelgrass habitat (to -5 ft MLLW). However, this mitigation site would likely accomplish only part of the 7.22 mitigation requirement, due to navigational hazard constraints associated with the A-9 Anchorage.
A-8 Anchorage	A-8 Anchorage is an approximately 80 acre area adjacent to the Sweetwater Channel and was the only long-term free anchorage area available on the west coast. In June 2006, the San Diego Board of Port Commissioners authorized the closure of the A-8 Anchorage, and complete closure occurred on October 1, 2008. The water depth within A-8 Anchorage ranges from -10 to -12 ft MLLW, and the substrate generally consists of soft-bottom mud habitat. The area does not currently support eelgrass. The soft mud-bottomed site has been the focus of extensive debris mapping and clean up. In general, the site lacks substantive marine epibenthic activity although sunken vessel hulls provide hard structure and relief that supports a greater aggregation of fish and invertebrates than the otherwise featureless bottom. Barred sand bass are relatively common around the sunken vessel hulls, *Sargassum* growing on the hulls supports use by giant kelpfish. Opaleye are found in small schools around a few portions of the site. Pacific seahorse is also represented in the hard structure debris fields. The placement of suitable dredge material at the A-8 Anchorage could be designed to accommodate the 7.7 acres of eelgrass habitat (to -5 ft MLLW) required for mitigation.
South Bay Borrow Site	The South Bay Borrow Site was created as mitigation for eelgrass impacts from the National City Marine Terminal Extension Project, and is a 20-acre sediment borrow pit within south San Diego Bay, partially filled with sandy material to create a suitable eelgrass mitigation area. The eelgrass mitigation area was completed in early 2004. Investigations of the site following construction indicate that most of the borrow pit was filled to elevations of -6 ft MLLW, although there were several areas where the depths were greater than -9 ft MLLW. Routine monitoring conducted in the area of the borrow pit in February 2006, revealed that the transplant site was performing poorly and signaled the need for a supplemental transplant. Additional planting was completed in May 2006, and was subsequently surveyed for eelgrass coverage and density at the 24-month post-transplant mark. During a 36-month monitoring survey, a total of 0.03 acres of eelgrass was mapped within the control site, but there was no eelgrass identified within either the Mitigation Bank Site or the Mitigation Site. The site is not performing as desired at the present time, however, future efforts and a change in environmental conditions may allow the eelgrass to establish and then serve its intended purpose. This site could accommodate the mitigation requirement of 7.7 acres of eelgrass habitat.
South Bay Power Plant	The South Bay Power Plant (SBPP) is a non-operational electric power generating facility located on the southeastern shoreline of San Diego Bay. The aquatic habitats in the vicinity of the SBPP are characteristic of protected inshore marine environments. The flora and fauna of the region consists of communities living above, on, and within soft benthic substrates. Benthic substrates are composed mostly of alluvial sediments, including fine-grained sand, silt, and clay. Some expanses of bottom along the western shoreline of the bay, however, are dominated by larger-grained sand. Because of the absence of freshwater inflow, plant and animal communities are typical of marine and higher salinity estuarine environments. Aquatic habitats include subtidal areas, eelgrass beds, mudflats, and salt marshes. This site could accommodate the mitigation requirement of 7.7 acres of eelgrass habitat.
South Bay Power Plant Intake Channel	The intake channel to the SBPP is located north of the Chula Vista Wildlife Refuge and consists of slightly deeper water (approximately -10 to -12 ft MLLW) than the surrounding areas that support extensive eelgrass beds. The placement of suitable dredge material could be designed to accommodate eelgrass habitat (to -5 ft MLLW), mimicking the surrounding area. This site could accommodate the mitigation requirement of 7.7 acres of eelgrass habitat.
Emory Cove Channel	Emory Cove, an inlet in the southwest corner of San Diego Bay, served as an anchorage until 1987 when the District began enforcing rules making it unlawful to anchor, moor, make fast to the bottom, strand or ground (any) vessel or structure within South San Diego Bay, including

Table 5-25: Potential Mitigation Sites for Eelgrass Loss

Potential Eelgrass Mitigation Site	Description
	Emory Cove. The Emory Cove anchorage was subsequently cleaned up in the early 1990s. The channel approaching Emory Cove is slightly deeper (approximately -10 ft MLLW) than the adjacent area that supports extensive eelgrass beds. The placement of suitable dredge material could be designed to accommodate eelgrass habitat and is large enough to meet the entire mitigation requirement.

Mitigation Measure 5.10.4.4: Jurisdictional Waters and San Diego Bay Surface Loss. New bay habitat shall be created within an alternative location of the San Diego Bay via excavation of shoreline and creation of tidal influence in previously non-tidal areas. The mitigation ratio for the loss of 8.5 acres of intertidal and subtidal habitats would occur at a 1:1 ratio. The coastal salt marsh habitat shall be mitigated at a 4:1 ratio (i.e., creation of 0.44 acres of salt marsh habitat for 0.11 acres impact). This shall include:

a. The removal and disposal or reuse of historic fills;

b. Grading the site to a desired hydrologic condition of channels, subtidal basins, and intertidal flats in order to support desired compensatory habitat; and

c. Planting pilot vegetation plots to allow for natural expansion of marshland vegetation.

The creation of new bay surface water habitat may occur in one or more of the following locations, as approved by the resource agencies NMFS, USFWS, EPA, CDFG and ACOE: 1) Grand Caribe Isle in the Coronado Cays; 2) D Street Fill just across the Sweetwater Channel from the National City Marine Terminal; 3) the South Bay Power Plant; 4) the Salt Works; and/or; 5) Pond 20 adjacent to the Salt Works. The approved mitigation site shall be lowered from upland elevations to create intertidal and subtidal habitats, except for the South Bay Power Plant, which would require filling the existing intake and discharge channels of the power plant to create tidal lands. The mitigation ratio for intertidal and subtidal habitats would occur at a 1:1 ratio; however, the coastal salt marsh habitat would have to be mitigated at a 4:1 ratio. These ratios would require the replacement of approximately 3.9 acres of intertidal habitat, 4.49 acres of shallow subtidal habitat, 0.31 acres of moderately deep and deep subtidal habitat (which would most likely be replaced as intertidal habitat due to habitat value) and 0.44 acres of coastal salt marsh habitat. Brief descriptions of the potential mitigation locations for jurisdictional and San Diego Bay surface loss impacts are described Table 5-26. <u>The San Diego Water Board shall verify implementation of this measure.</u>

Table 5-26: Potential Mitigation Sites for San Diego Bay Surface Water Loss

Potential Surface Bay Loss Mitigation Site	**Description**
Grand Caribe Isle	The Grand Caribe Isle is located on South Grand Caribe Isle in the Coronado Cays. The South Grand Caribe Isle site is a disturbed upland area that would be regraded to accommodate wetland, intertidal marsh, and subtidal habitat. This area is located adjacent to a small passive use native plant park and has recently been used as a borrow site for the former Campbell Shipyard sediment remediation project sediment sand cap. The on-site soil consists of loamy sand from marine deposits. The Bay surrounds the site, with the peninsular connection being isolated from other native upland habitats by the Coronado Cays residential development. The biological resources on the site are dominated by common, widely distributed species, many of which are representative of disturbed lands. Species well represented on the site include salt heliotrope (*Heliotropium curvassavicum*), slender-leaved iceplant (*Mesembryanthemum nodiflorum*), garland (*Chrysanthemum coronarium*), and red-stem filaree (*Erodium cicutarium*).
D Street Fill	D Street Fill is located immediately south of the National City Marine Terminal (NCMT) across the Sweetwater River channel. The site is routinely cleared/disked in an effort to provide nesting habitat for the California least tern (*Sterna antillarum browni*). As a result, the area is mostly devoid of vegetation. Plant species that occur are limited to native and non-native species that are typical of disturbed sandy soils found in the area. These species include opportunistic native species such as woolly lotus (*Lotus heermannii* var. *heermannii*), salt heliotrope, beach evening primrose (*Camissonia cheiranthifolia* ssp. *suffruticosa*), coyote brush (*Baccharis pilularis*), coast woollyheads (*Nemacaulis denudata* var. *dunudata*), and fragrant everlasting (*Pseudognaphalium beneolens*). Non-native plant species include hottentot-fig (*Carpobrotus edulis*), slender-leaved iceplant, garland, pineapple weed (*Amblyopappus pusillus*), and red-stem filaree. Bird species that utilize this area for foraging and/or nesting include horned lark (*Eremophila alpestris*); Northern rough-winged swallow (*Stelgidopteryx serripennis*); and during the winter, American pipet (*Anthus rubescens*) (pers.com Robert Patton). The gull-billed tern (*Sterna nilotica*), a species that predates on California least tern young, is also known to forage over the site.
Salt Works	Marsh lands around the mouth of the Otay River in the shallow, south end of San Diego Bay were converted to salt evaporation ponds in the late 1800s. Over the past century, various internal berms have been constructed, repaired, and removed by operational changes and flooding. These changes have resulted in changing topographic conditions that have resulted in a number of distinct pond cells. The salt ponds consist of shallow, open water cells of different salinity levels interspersed with mudflats, dry dikes, and salt marsh. The salt pond levees consist primarily of unvegetated uplands. The lack of vegetation on many of the levee tops is the result of ongoing maintenance activities associated with the salt operation, as well as the high salinities that exist in the vicinity of the levees. The nature of the salt extraction process has facilitated use of this artificial habitat by many shorebirds, sea birds, and waterfowl. It represents one of the few large feeding, roosting, and nesting areas remaining along the urbanized southern California coast.
Pond 20	The Pond 20 site, located south of the Salt Works is defined by internal dikes that include three smaller pond cells (Ponds 20A, 20B, and 20C). Pond 20 is isolated from tributary fresh or saltwater surface input and experiences occasional storm runoff from the internal pond basin and a roadway surface drain from Palm Avenue. Seasonally, water levels in the pond fluctuate

Table 5-26: Potential Mitigation Sites for San Diego Bay Surface Water Loss

Potential Surface Bay Loss Mitigation Site	Description
	significantly and waters are highly saline due both to the pond's history as a salt concentrator and the continued closed system evaporative processes occurring in the pond today. Years of drought and heavy rainfall influence the levels of standing water in the pond and the rates of fluctuation of water surface levels. At present, limited standing water is found along the lower-lying "channels" that parallel the dike and generally below a nearly complete salt crust. These deeper channels are believed to be borrow areas for the reconstruction and repair of the pond containment dikes. These channels also historically enhanced water collection for pumped transfers within the salt pond system.

Impacts and Mitigation for Biological Resources Mitigation Measure Implementation. The implementation of the biological resources mitigation measures, described above as 5.10.4.3 and 5.10.4.4, would result in potential environmental impacts. The impacts anticipated include:

1. Air pollutant emissions associated with excavation and fill placement construction activities;
2. Water quality impacts to San Diego Bay through the placement of fill to create plateaus for eel grass beds depending on the mitigation site or sites selected;
3. Indirect impacts to the endangered California least tern for the D Street Fill, Pond 20 and Salt Works intertidal, subtidal and surface water creation sites; and
4. Indirect impacts to the endangered Pacific green sea turtle from water turbidity impacts.

Each of these impacts and mitigation measures are briefly discussed below.

Air Pollutant Emissions. Air Pollutant emissions from construction activities include excavation to create intertidal, subtidal and surface water creations sites, and placement of fill to create eel grass beds. The assumptions for these activities include 8 hours a day for an excavator, a tug boat pulling a barge and a clam shell crane. The daily emissions associated with these activities and greenhouse gas emissions are discussed below.

Tidal and Salt Marsh Habitat Creation. Mitigation for tidal and salt habitat would involve the creation of 4.2 acres of intertidal habitat, 4.5 acres of shallow subtidal habitat, and 0.44 acres of coastal salt marsh habitat, for a total of 9.14 acres of habitat creation. A total of 274,000 cubic yards (cy) of sediment would be excavated. 82,000 cy would be transferred to a barge using a crane. This sediment would be used to create eel grass habitat and would be stored on the barges until the commencement of eel grass habit construction. 192,000 cy of sediment would be transported via truck to the Otay landfill. Construction would take approximately nine months. Maximum daily construction emissions that would result from habitat construction are shown in Table 5-27. As shown in this table, creation of tidal and salt marsh habitat would not exceed the significance thresholds for any criteria pollutants. All air pollutant emissions would be less than significant.

Eelgrass Habitat Creation. Creation of 7.2 acres of eelgrass habitat would require the import of approximately 82,000 cy of dirt to create a bay bottom that is a suitable depth for eel grass. The dirt would be transported by barge from the tidal and salt marsh habitat excavation sites. One tug boat would be required per day and would travel four hours to and from the site, for a total of 8 hours of operation. A clamshell crane would be used to transfer the dirt from the barge to the habitat site. Construction would take approximately five months. Maximum daily construction emissions that would result from eelgrass habitat construction are shown in Table 5-28. As shown in this table, creation of eelgrass habitat would not exceed the significance thresholds for any criteria pollutants. All air pollutant emissions would be less than significant.

Table 5-27: Tidal and Salt Marsh Habitat Creation Maximum Daily Emissions

Construction Phase	Pollutant Emissions (pounds/day)					
	CO	**NO_X**	**VOC**	**SO_X**	**PM_{10} (1)**	**$PM_{2.5}$ (1)**
Tidal and Salt Marsh Habitat Construction	26	60	6	0	63	15
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	No	No	No	No	No

CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter

1. Estimates of particulate emissions take into account application of soil stabilizers to inactive areas during grading in mandatory compliance with San Diego Air Pollution Control District (SDAPCD) Rule 55.

Source: URBEMIS, 2007. See Appendix J for data sheets.

Table 5-28: Eelgrass Creation Maximum Daily Emissions

Construction Phase	Pollutant Emissions (pounds/day)					
	CO	**NO_X**	**VOC**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Construction Equipment Operation	2	6	1	0	1	1
Tug Boat Operation	15	81	3	1	3	2
Total Emissions	*17*	*87*	*4*	*1*	*4*	*3*
Significance Threshold	**550**	**250**	**137**	**250**	**100**	**55**
Significant Impact?	No	No	No	No	No	No

CO = carbon monoxide; NO_x = nitrogen oxides; VOC = volatile organic compounds; SO_x = sulfur oxides
PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter
Source: URBEMIS, 2007. See Appendix A for data sheets.

Greenhouse Gas Emissions. Greenhouse gas (GHG) emissions from construction of mitigation habitat are calculated based on the construction assumptions described above.

Total GHG emissions are shown in Table 5-29. Construction of the salt and tidal marsh habitat would result in 935 metric tons (MT) carbon dioxide equivalent (CO_2e). Construction of eel grass habitat would result 446 MT CO_2e. Total GHG emissions from habitat construction would be 1,381 MT CO_2e. As discussed in Section 5.10.7, Greenhouse Gas Emissions/Climate Change, GHG emissions from construction should be amortized over a 30 year period to determine the long-term annual contribution to the GHG inventory. As shown in Table 5-29, the annual GHG contribution of GHGs from habitat construction would be 46 MT CO_2e. Therefore, construction GHG emissions would not exceed the 900 MT CO_2e threshold established by the County of San Diego. Impacts would be less than significant.

Water Quality. The water quality impacts to San Diego Bay are associated with the placement of material to create subsurface plateaus to plant eelgrass. These impacts would be mitigated through implementation of the water quality mitigation measures 5.10.9.1 through 5.10.9.5, in Section 5.10.9, Hydrology and Water Quality, and mitigation measures 4.2.1 through 4.2.13, in Section 4.2, Water Quality.

Table 5-29: Estimated Annual GHG Emissions from Habitat Construction

Emission Source	**GHG Emissions (Metric Tons CO_2e)**
Tidal and Salt Marsh Habitat Creation	935
Eel Grass Habitat Creation	446
Total Construction Emissions	**1,381**
Amortized Construction Emissions	**46**

Source: URBEMIS 2007, EPA 2009
Note: Amortization is based on a 30 year lifetime.

California Least Tern Indirect Impacts. Mitigation for indirect impacts associated with construction activities include the water quality mitigation measures identified above, which reduce sediment turbidity through the use of silt curtains and other BMPs.

Pacific Green Turtle Indirect Impacts. The indirect construction related water quality impacts to the endangered Pacific Green Turtle would be mitigated through the implementation of the water quality mitigation measures 5.10.9.1 through 5.10.9.5, in Section 5.10.9, Hydrology and Water Quality, and mitigation measures 4.2.1 through 4.2-13, in Section 4.2, Water Quality.

Cumulative Impacts

The geographic scope of the cumulative impact analysis for biological resources varies depending on the type of biological resource that could be impacted. The geographic scope for each of the five biological resource topic areas is described below as part of the cumulative impact discussion for each of the topics.

Threshold 5.10.4.1: Candidate, Sensitive or Special Status Species. The geographic scope of the cumulative impact analysis for candidate, sensitive or special status species is the San Diego Bay. Past and present cumulative projects in the region, some of which are identified in Table 5-8, Cumulative Projects in the Vicinity of Convair Lagoon Alternative, have resulted in development that has caused the direct loss of plant and animal species. In combination, these impacts resulted in the populations of many plant and animal species to drop below self-sustaining levels. These plants and animals have since been identified as candidate, sensitive, or special status by the CDFG, USFWS and local and regional plans and policies. As indicated by their sensitive status, a significant cumulative impact has already occurred from the loss of sensitive plant and animal populations as a result of development of past and present cumulative projects. Future cumulative projects also have the potential to further impact sensitive species. For example, 12 of the 27 cumulative projects identified in Table 5-8 are located on the San Diego International Airport Property and have the potential to directly or indirectly impact least tern's, which nest on the San Diego International Airport site. Therefore, a significant cumulative impact would occur to candidate, sensitive or special status species.

As discussed above, implementation of the Convair Lagoon Alternative would result in indirect impacts to the California Least Tern, a federally endangered and state endangered species. Therefore, the Convair Lagoon Alternative would result in indirect impacts to a special status species. However, with implementation of mitigation measure 5.10.4.1, the alternative's indirect impacts would be reduced to a level below significance and the alternative's contribution to the regional impact would not be cumulatively considerable because it is a fully mitigated indirect impact.

Threshold 5.10.4.2: Riparian Habitat and Other Sensitive Communities. The geographic scope of the cumulative impact analysis for riparian habitat and other sensitive communities is San Diego Bay. Past and present cumulative projects in the geographic scope of the cumulative impact analysis, some of which are identified in Table 5-8, Cumulative Projects in the Vicinity of Convair Lagoon Alternative, have resulted in development that caused the disturbance or direct loss of riparian habitat and sensitive natural communities, including surface water and eelgrass beds that support sensitive plant and wildlife species. In combination, these impacts resulted in the loss or disturbance of habitat communities so that areas of these communities are no longer able to support viable populations of sensitive or characteristic plant and wildlife species. Due to their importance to biodiversity in the region, a significant cumulative impact has occurred from the loss of riparian habitat and other sensitive natural communities, including surface water and eelgrass beds, from past development. Future development also has a potential to further impact sensitive natural communities. For example, the Commercial Fisheries Revitalization Plan, identified as a cumulative project in Table 5-8, would support and increase commercial fishing operations in the bay and could result in direct or indirect impacts to sensitive natural marine communities or eelgrass from an increase in coastal public access facilities and the expansion of commercial fishing facilities, such as docks. Therefore, a significant cumulative impact would occur to other natural communities.

As discussed above, implementation of the Convair Lagoon Alternative would result in the direct loss of San Diego Bay surface water and eelgrass, which are considered sensitive communities. Therefore, the Convair Lagoon Alternative would result in a significant cumulative impact to these communities. However, with implementation of mitigation measures 5.10.4.2 through 5.10.4.4, the alternative's direct impacts would be reduced to a level below significance and the alternative's contribution to the regional impact would not be cumulatively considerable.

Threshold 5.10.4.3: Jurisdictional Waters. The geographic scope of the cumulative impact analysis for jurisdictional waters is the San Diego Bay because it is part of a defined aquatic ecosystem. Past and present cumulative projects in the geographic scope of the cumulative impact analysis, identified in Table 5-8, Cumulative Projects in the Vicinity of Convair Lagoon Alternative, have resulted in development that caused substantial adverse effect on wetlands, waters, or riparian resources under the jurisdiction of ACOE, CDFG, and/or San Diego Water Board through direct removal, filling, hydrological interruption, or other means. In combination, these impacts resulted in the loss or disturbance of wetland resources so that these communities are no longer able to support viable populations of characteristic riparian species, which is considered a significant cumulative impact. Future cumulative development also has a potential to further impact jurisdictional waters. For example, the Marina Green Project would create a new shoreline promenade that could potentially directly or indirectly impact jurisdictional waters from water related construction activities such as dredging and filling. Therefore, a significant cumulative impact would occur to jurisdictional waters.

As discussed above, implementation of the Convair Lagoon Alternative would result in direct impacts to 9.85 acres of jurisdictional waters, protected under the Clean Water Act. Therefore, impacts to jurisdictional waters from the Convair Lagoon Alternative would be significant. However, with implementation of mitigation measures 5.10.4.2 through 5.10.4.4, the alternative's direct impacts would be reduced to a level below significance and the alternative's contribution to the regional impact would not be cumulatively considerable.

Threshold 5.10.4.4: Wildlife Movement Corridors. The geographic scope of the cumulative impact analysis for wildlife movement corridors includes a 1-mile radius surrounding the project site, within the San Diego Bay. According to the USFWS, the entire California Coast, including San Diego Bay, is part of the Pacific Flyway (USFWS, 2010). The Pacific Flyway is one of four geographical patterns in the United States that represent the major migratory patterns of waterfowl through the continent. Past development in the geographic scope of the cumulative impact analysis has resulted in development that has restricted wildlife access between habitats, directly by removing habitat and indirectly through increases in traffic that create a barrier to wildlife. In combination, past development resulted in the loss of wildlife movement corridors, which are important to the viability of wildlife species populations by ensuring the exchange of genes between populations to maintain genetic diversity and providing access to habitat suitable for the reproduction of species. Future cumulative development within the geographic scope of cumulative analysis, identified in Table 5-8, are located in a highly developed urban area that consists mainly of industrial and commercial land uses. Future cumulative projects in this area would result in the redevelopment of already disturbed areas, and would not result in the loss of any natural, undeveloped land that functions as a significant wildlife movement corridor. Therefore, future cumulative projects within the geographic scope of cumulative impact analysis would not result in a significant cumulative impact to wildlife movement corridors because a significant cumulative impact to wildlife movement corridors already occurred due to past development in the area and this alternative would not result in a considerable contribution to this existing cumulative impact.

As discussed above, implementation of the Convair Lagoon Alternative would not interfere substantially with the movement of regional wildlife species because a large presence of armored shoreline exists in the area surrounding the Convair Lagoon Alternative site. Cumulative impacts to local wildlife movement corridors would be less than significant from the Convair Lagoon Alternative because it would not result in a cumulatively considerable contribution to this cumulative impact.

Threshold 5.10.4.5: Local Policies and Ordinances. The geographic scope of the cumulative impact analysis for local policies and ordinances includes lands under the jurisdiction of the San Diego Unified Port District. Cumulative projects would be required to demonstrate compliance with the applicable local biological resource policies and ordinances as part of the CEQA process prior to project approval. Therefore, a significant cumulative impact would not occur.

As discussed above, the Convair Lagoon Alternative would result in a conflict with the Southern California Eelgrass Mitigation Policy, which would result in a significant impact. However, with implementation of mitigation measure 5.10.4.2 through 5.10.4.4, impacts would be reduced to a level below significance. Therefore, the Convair Lagoon Alternative would not contribute to a significant cumulative impact.

Level of Significance After Mitigation

Upon implementation of mitigation measures 5.10.4.1, 5.10.4.2, 5.10.4.3, and 5.10.4.4 all significant impacts related to biological resources would be reduced to a level below significance.

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Figure 5-8: Existing Habitat Map

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Figure 5-9: Biological Resources Impacts

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Significant Unavoidable Adverse Impacts

There are no significant and unavoidable adverse impacts to biological resources from implementation of the Convair Lagoon Alternative.

5.10.5 Cultural Resources

This section addresses cultural and paleontological resources on the Convair Lagoon Alternative site. Cultural resources include both archaeological and historic sites, buildings, structures, objects and human remains. Paleontological resources include the remains and/or traces of prehistoric life (exclusive of human remains, artifacts or features), including the localities where fossils were collected and the sedimentary rock formations in which they were formed. This section identifies existing cultural and paleontological resources, analyzes the potential impacts that may occur under the Convair Lagoon Alternative, recommends mitigation measures to reduce or avoid impacts to these resources and examines levels of significance after mitigation. The information in this section is based on the *Convair Lagoon Architectural Resources Evaluation and Assessment of Effects* prepared by ASM Affiliated in April 2011, which is included as Appendix K to this EIR.

5.10.5.1 Existing Environmental Setting

The following discussion identifies the archaeological, historical and paleontological resources that currently exist on the Convair Lagoon Alternative site.

Archaeological Resources

The prehistory of San Diego County provides a background for understanding the archeology of the general area surrounding the Convair Lagoon Alternative site. The earliest accepted archaeological manifestation of Native Americans in the San Diego area is the Paleoindian San Dieguito complex, dating to approximately 10,000 years ago. The material culture of the San Dieguito complex consists primarily of scrapers, scraper planes, choppers, large blades, large projectile points and crescentic stones. Tools and debitage made of fine-grained green metavolcanic material, locally known as felsites, were found at many San Dieguito sites. Often these artifacts were heavily patinated. Felsite tools, especially patinated felsites, came to be seen as an indicator of the San Dieguito Complex. Sleeping circles, trail shrines and rock alignments have also been associated with early San Dieguito sites.

The traditional view of San Diego prehistory has the San Dieguito complex followed by the Archaic state La Jolla complex at least 7,000 years ago, possibly as long as 9,000 years ago. The La Jolla complex is part of the Encinitas tradition. The Encinitas tradition is generally recognized by milling assemblages in shell middens, often near sloughs and lagoons. Crude cobble tools, especially choppers and scrapers, characterize the La Jolla complex. Basin mutates, manos, discoidals, a small number of Pinto series and Elko series points, and flexed burials are also characteristic.

The Late Prehistoric period is represented by the San Luis Rey complex in northern San Diego County and the Cuyamaca complex in the southern portion of the county. The Cuyamaca complex represents the Yuman forebarers of the Kumeyaay. The Cuyamaca complex is represented by defined cemeteries away from living areas, the use of grave markers, cremations placed in urns, use of specially made mortuary offerings, cultural preference for side-notched points, substantial numbers of scrapers and scraper planes, wide range of ceramic forms and items, steatite industry, clay lined hearths, and a high frequency of milling stones.

The Convair Lagoon region is within lands that have traditionally been inhabited by the Kumeyaay Indians, also known as Diegueno or Ipai/Tipai. Two enthohistoric village sites associated with Mission San Diego de Alcala existed in Mission Valley: Cosou and Nipaquay. Mission Valley lies approximately two miles north of the Convair Lagoon site (Affinis, 2006).

Historic Resources

The general area near the Convair Lagoon site was once home to major aircraft manufacturing companies such as Teledyne-Ryan Aeronautical Company and Convair. The following section provides information on San Diego's aviation history, in addition to providing detailed information on two on-site features, a seaplane ramp and a pier.

San Diego's Aviation History. The Convair Lagoon is located directly south of the San Diego International Airport, formerly Lindbergh Field. Lindbergh Field was formed in part from the development of an independent airline company called Ryan Airlines. Ryan Airlines operated an airline taxi service between San Diego and Los Angeles in 1924 and began the first year-round, scheduled airline service in the U.S. Shortly after, Ryan Airlines shifted their focus from airline taxi service to aircraft manufacturing. They subsequently constructed the *Spirit of St. Louis,* which was flown by Charles Lindbergh and in the spring of 1927 across the Atlantic Ocean. Shortly after the famous flight that made aviation history, the City of San Diego dredged an area next to the San Diego Bay and constructed Lindbergh Field. As a result, many aircraft companies re-located to the Lindbergh Field area from the 1920s to the late 1990s, including Convair.

San Diego was a major player in the aircraft industry in the mid-twentieth century and one of the largest employers in the city was Convair. Convair was founded in 1923 in Rhode Island and specialized in developing and designing aircraft vessels for the early aeronautics industry. Convair (formerly Consolidated) designed the first line of Long-Range flying boats called the XPY-1. Flying boats were an innovative technology in the early history of aircraft manufacturing and entailed an aircraft vehicle that had the ability to navigate water. The XPY-1 was known as the "largest flying boat built in the U.S.A." Convair designed and redesigned several flying boat models for the military.

Convair relocated from the east coast to San Diego in 1935. Its first buildings were constructed along Pacific Coast Highway next to Sassafras Street. The demand for military aircraft in World War II (WWII) proved to be a boon for the aircraft industry and for Convair, the seaplane industry was a particularly lucrative niche. By 1943, the company had 13 locations throughout the U.S. and a payroll of 101,637. In 1954, Convair merged with and became a division of General Dynamics. The San Diego Convair complex was primarily located west of the Convair Lagoon and south of Harbor Drive and Lindbergh Field, with a few buildings located elsewhere on the northern side of the air strip.

According to Sanborn maps and the San Diego Air & Space Museum online photo archives, sometime around 1957, the seaplane ramp and pier were constructed in the Convair Lagoon as part of a larger project that involved dredging up the bay to construct an area of land south of N. Harbor Drive on which the seaplane ramp is located. Harbor Island was dredged and constructed as an extension to this project in 1961. The pier and seaplane ramp appear to be the only structures that remain from the Convair complex today. A separate Teledyne-Ryan complex was located north of the Convair complex, on the northern side of Harbor Drive. Redevelopment in this area has resulted in the demolition of the majority of the buildings and structures from both of these complexes.

Convair Lagoon Pier. Figure 5-10 identifies the existing, on-site Convair Lagoon Pier. The Convair Lagoon Pier was constructed by the Convair aviation company circa 1957 and is located south of N. Harbor Drive on the San Diego Bay. It was likely constructed when the neighboring seaplane ramp located to the west of the pier was constructed circa 1957. It is a concrete pier approximately 120 feet (ft.) long and 10 ft. wide. Scored concrete walls support most of the pier length. At the outer end of the pier (waterside), four concrete pilings support the pier. There is one narrow projection on the east side of the pier, supported by two concrete pilings. Two large metal sheets cover a portion of the base of the pier walkway.

Convair Seaplane Ramp. Figure 5-10 identifies the existing, on-site Convair Seaplane Ramp. The Convair Seaplane Ramp was constructed by Convair circa 1957 and is located near the southwest corner of the site. It is currently located adjacent to a rental car lot, behind a chain link fence. The ramp is approximately 65 ft. long (from top of ramp to sea level) and 195 ft. wide. It is made of concrete. The seaplane ramp is intact but is no longer in use. According to a historic photograph from circa 1957, there was originally a narrow ancillary structure used for watercraft and possibly as a parking facility for seaplanes, which was attached to the ramp via a narrow driveway that jutted out into the bay. This ancillary structure no longer exists. Historically, the seaplane ramp was used as a transport connector between the San Diego Bay and the aircraft road surface/runway on land.

Paleontological Resources

The Convair Lagoon Alternative site was originally mudflats and open water of the San Diego Bay. Decades of dredging and placement of fill soils have built the surrounding areas to its current topography. The near-surface soil layers of the Convair Lagoon site consist of imported sand as fill used to cap PCB contaminated sediments. Recent bay deposits underlie the sand cap and PCB contaminated sediment. Bay deposit materials typically consist of interlayered dark gray, wet, loose, fine silty sand and silt and soft, sandy clay. Old paralic deposits underlie the bay deposits and typically consist of medium dense sand and stiff clay. Both bay deposits and old paralic deposits have a high potential for paleontological resources to occur (CSD, 2007).

5.10.5.2 Regulatory Setting

Cultural and paleontological resources in the region are protected through a number of regulations at the federal, state, and local levels. Below is a listing and brief description of some of the various regulations and standards that relate to cultural and paleontological resources within the region.

Federal

Historic Sites, Buildings, Objects, and Antiquities Act. The Historic Sites, Buildings, Objects, and Antiquities Act of 1935 states that it is the national policy to preserve for the public use historic sites, properties, buildings, and objects of national significance. It gives the National Park Services (NPS) broad powers to execute the policy on both federal and non-federal lands. The Act also set up an advisory board to aid the Secretary of the Interior in implementing the Act. The National Natural Landmarks (NNL) Program was established in 1962 to recognize and encourage the conservation of outstanding examples of the country’s natural history. NNLs are designated by the Secretary of the Interior, with the owner’s concurrence, as being of national significance, defined as being one of the best examples of a biological community or geological feature within a natural region of the U.S.

National Historic Landmarks Program. The National Historic Landmarks Program, developed in 1982, identifies and designates National Historic Landmarks, and encourages the long range preservation of nationally significant properties that illustrate or commemorate the history and prehistory of the U.S. These regulations set forth the criteria for establishing national significance and the procedures used by the Department of the Interior for conducting the National Historic Landmarks Program.

National Historic Preservation Act (NHPA). The NHPA was passed in 1966 and set the foundation for much of the more specific legislation that guides cultural resource protection and management in local jurisdictions such as the County of San Diego. The Act established an Advisory Council on Historic Preservation to help implement and monitor it. Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and afford the Advisory Council a reasonable opportunity to comment on such undertakings. The goal of the section 106 process is to identify historic and prehistoric properties potentially affected by the undertaking, assess its effects and seek ways to avoid, minimize or mitigate any adverse effects on historic or prehistoric properties.

National Register of Historic Places (NRHP). Developed in 1981, the NRHP is an authoritative guide to be used by federal, state, and local governments, private groups and citizens to identify the nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment. Listing of private property on the NRHP does not prohibit under federal law or regulation any actions which may otherwise be taken by the property owner with respect to the property.

Native American Graves Protection and Repatriation Act (NAGPRA). Enacted in 1990, NAGPRA conveys to American Indians of demonstrated lineal decent, the human remains and funerary or religious items that are held by federal agencies and federally supported museums, or that have been recovered from federal lands. It also makes the sale or purchase of American Indian remains illegal, whether or not they derive from federal or Indian lands.

The Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation. The purpose of the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation of 1983 is to: 1) to organize the information gathered about preservation activities; 2) to describe results to be achieved by federal agencies, states, and others when planning for the identification, evaluation, registration and treatment of historic properties; and 3) to integrate the diverse efforts of many entities performing historic preservation into a systematic effort to preserve the nation's culture heritage.

State

State Historical Landmarks Program. The State Historical Landmarks Program places an emphasis on well-known places and events in California history. The goals of the program include the preservation and maintenance of registered landmarks, most of which include missions, early settlements, battles, and gold rush sites.

State Points of Historical Interest Program. The State Points of Historical Interest Program was established in the effort to accommodate local historic properties not able to meet the restrictive criteria of the State Historical Landmarks Program. The Points of Historical Interest Program requires the participation of local governmental officials, such as the chairperson of the Board of Supervisors, in the approval process.

California Register of Historical Resources (CRHR). The CRHR is an authoritative guide for use by state and local agencies, private groups, and citizens to identify the state's historical resources. A historical resource can include any object, building, structure, site, area, or place that is determined to be historically or archaeologically significant. The CRHR also identifies historical resources for state and local planning purposes, and determines eligibility for state historic preservation grant funding.

California Native American Graves Protection and Repatriation Act (Cal NAGPRA). The Cal NAGPRA 2001 conveys to American Indians of demonstrated lineal descent, the human remains and funerary items that are held by state agencies and museums.

California Public Resources Code (PRC) 5079–5079.65 – California Heritage Fund. PRC sections 5079–5079.65 outline the appropriate uses of the California Heritage Fund. The fund shall be available, upon appropriation by the state Legislature, to implement laws providing for historical resource preservation, including, but not limited to, section 5028 and Executive Order W-26-92, under criteria developed by the Office of Historic Preservation and adopted by the State Historical Resources Commission.

California PRC 5097–5097.6 – Archaeological, Paleontological and Historical Sites. PRC sections 5097–5097.6 outline the requirements for cultural resource analysis prior to the commencement of any construction project on state lands. This section provides that the unauthorized disturbance or removal of archaeological, historical, or paleontological resources located on public lands is a misdemeanor. It prohibits the knowing destruction of objects of antiquity without a permit (expressed permission) on public lands, and provides for criminal sanctions. This section was amended in 1987 to require consultation with the California Native American Heritage Commission (NAHC) whenever Native American graves are found. Violations for the taking or possessing remains or artifacts are felonies.

California PRC 5097.9–5097.991 – Native American Heritage. PRC sections 5097.9–5097.991 provide that no public agency, and no private party using or occupying public property, or operating on public property, under a public license, permit, grant, lease, or contract made on or after July 1,1977, shall in any manner whatsoever interfere with the free expression or exercise of Native American religion as provided in the U.S. Constitution and the California Constitution; nor shall any such agency or party cause severe or irreparable damage to any Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine located on public property, except on a clear and convincing showing that the public interest and necessity so require it. In addition, this section details the composition and responsibilities of the NAHC. The NAHC strives for the preservation and protection of Native American human remains, associated grave goods, and cultural resources. The NAHC has developed a strategic plan to assist the public, development community, local and federal agencies, educational institutions and California Native Americans to better understand problems relating to the protection and preservation of cultural resources and to serve as a tool to resolve these problems and create an awareness among lead agencies and developers of the importance of working with Native Americans.

PRC sections 5097.91 and 5097.98 were amended by State Assembly Bill 2641 in 2006. This bill authorizes the NAHC to bring an action to prevent damage to Native American burial grounds or places of worship and establishes more specific procedures to be implemented in the event that Native American remains are discovered.

California Government Code (GC) Section 25373. GC section 25373 gives authority to local governments to acquire property for the preservation or development of a historical landmark. In addition, local governments may provide special conditions or regulations for the protection, enhancement, perpetuation, or use of places, sites, buildings, structures, works of art and other objects having a special character or special historical or aesthetic interest or value.

California GC Section 27288.2. GC section 27288.2 requires the County Recorder to record a certified resolution establishing a historical resources designation issued by the State Historical Resources Commission or a local agency. For previously designated properties, the county may record the certified resolution establishing the historical resources designation upon submission.

California GC Sections 50280–50290 – Mills Act. The Mills Act provides for reduced property taxes on eligible historic properties in return for the property owner's agreement to maintain and preserve the historic property. Preservation of properties is to be in accordance with the standards and guidelines set forth by the Secretary of the Interior. In order to be designated, a building must meet qualifying criteria such as significant architecture, association with a historically significant event or person, or location in a historic district.

California Health and Safety Code (HSC) Sections 18950-18961 – State Historic Building Code. HSC sections 18950 through 18961 provide alternative building regulations and building standards for the rehabilitation, preservation, restoration (including related reconstruction), or relocation of buildings or structures designated as historic buildings. Such alternative building standards and building regulations are intended to facilitate the restoration or change of occupancy so as to preserve their original or restored architectural elements and features, to encourage energy conservation and a cost-effective approach to preservation, and to provide for the safety of the building occupants.

California HSC 7050.5 - Human Remains. HSC section 7050.5 requires that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlay adjacent remains, until the County Coroner has examined the remains. If the coroner determines the remains to be those of a Native American, or has reason to believe that they are those of a Native American, the coroner shall contact by telephone within 24 hours the Native American Heritage Commission. In addition, any person who mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor.

California Penal Code Section 622 – Destruction of Historical Properties. Penal Code section 622 provides that any person, not the owner thereof, who willingly destroys or injures objects of archaeological or historical value, whether on public or private land, is guilty of a misdemeanor.

Senate Bill (SB) 18 – Traditional Tribal Cultural Places. SB 18, enacted in 2004, amended various provisions of the California Government Code to require local governments to consult with Native American groups at the earliest point in the local government land use planning process. The consultation intends to establish a meaningful dialogue regarding potential means to preserve Native American places of prehistoric, archaeological, cultural, spiritual, and ceremonial importance. It allows for tribes to hold conservation easements and for tribal cultural places to be included in open space planning.

5.10.5.3 Methodology

ASM's Associate Architectural Historian, Jennifer Krintz, M.H.P., conducted a site visit to the Convair Lagoon Alternative area and photographed the subject resources on April 6, 2011. In addition, Ms. Krintz conducted archival research at the San Diego Public Library in the California Room on the same day. Newspaper and vertical files as well as books were obtained from the California Room. A records search was requested on March 30, 2011, from the South Coastal Information Center (SCIC). Results from the SCIC records search included 22 historic resources found within a 0.5-mile radius of the project area. Sanborn maps, historic aerials and photographs were found online and reviewed. Information from a previous environmental impact report (EIR) on 2701 N. Harbor Drive (prepared by URS) was also used in the research of the Architectural Resources Evaluation and Assessment of Effects report.

5.10.5.4 Thresholds of Significance

Threshold 5.10.5.1: Historical Resources. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant impact to a historical resource if it would result in a substantial adverse change in the significance of an historical resource as defined in CEQA Guidelines section 15064.5.

Pursuant to CEQA Guidelines section 15064.5, a "historical resource" is one that:

1. Is listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Pub. Res. Code, § 5024.1, Title 14 CCR, section 4850 et seq.).
2. Is included in a local register of historical resources, or is identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code.
3. Is an object, building, structure, site, area, place, record or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.

Threshold 5.10.5.2: Archaeological Resources. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a potentially significant impact if it would cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines section 15064.5.

Threshold 5.10.5.3: Paleontological Resources. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant impact if it would directly or indirectly destroy a unique paleontological resource or unique geologic feature.

Threshold 5.10.5.4: Human Remains. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant impact if it would disturb any human remains, Native American or otherwise, including those interred outside of formal cemeteries.

5.10.5.5 Impacts and Mitigation Measures

Less Than Significant Impacts

Threshold 5.10.5.1: Historical Resources. As part of the Convair Lagoon Alternative, the concrete seaplane ramp and pier located on the site would be demolished. Both the seaplane ramp and the pier were constructed circa 1957. The following discussion provides an evaluation of the seaplane ramp and pier for eligibility of listing in the NRHP, the CRHR, the local register for the City of San Diego Historical Sites, and of qualifying as a historic resource under CEQA.

The results from the SCIC records search included 22 historic resources found within a 0.5-mile radius of the project area. However, these 22 historic resources are properties that are not associated with the Convair complex or Convair Lagoon Alternative site structures. Additionally, as a result of the recent demolition of the adjacent Teledyne Ryan complex, most of these 22 historic resources have been demolished. Therefore, an evaluation of these resources is not included in this analysis because they are not relevant to the Convair Lagoon Alternative or the Convair complex. Refer to Appendix A, Initial Study, of this EIR for impacts related to historical resources from dredging and dewatering activities at the Shipyard Sediment Site.

National Register of Historic Places. National Register Bulletin 15 outlines the criteria to be used when determining a historic resource's eligibility for listing in the NRHP. The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess *integrity* and meets one or more of the following four criteria:

Criterion A: Criterion A historical resources are associated with events that have made a significant contribution to the broad patterns of our history.

Criterion B: Criterion B historical resources are associated with the lives of persons significant in our past.

Criterion C: Criterion C historical resources embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

Criterion D: Criterion D historical resources have yielded, or may likely yield, information important in prehistory or history.

NRHP Criterion A. Of all the facilities located on the Convair Lagoon Alternative site, the seaplane ramp and the pier have the strongest potential for historic significance due to their association with the local aircraft industry in San Diego. The aircraft industry in San Diego is significant for its contribution to several historic milestones in the aeronautics industry; including the construction of the *Spirit of St. Louis* and the construction of the first spacecraft that orbited the earth. The existing pier and seaplane ramp were previously part of a larger aircraft manufacturing complex that included several buildings, hangars, runways and testing sites for the aviation company Convair. However, most of this complex has been redeveloped by the San Diego International Airport and has lost its integrity as a larger historic district.

The seaplane ramp was previously part of a large structure that held a runway and other associated aircraft buildings used by Convair seaplanes. Historically, the seaplane ramp was used as a transport connector between the San Diego Bay and the aircraft road surface/runway on land. Currently, the visual relationship between the components of the manufacturing complex has been compromised by the on-site chain link fence and the intrusion of the rental car parking lot to the west. Additionally, the seaplane ramp was originally equipped with a narrow ancillary structure used for watercraft and seaplanes. This ancillary structure was attached to the sea plane ramp via a narrow driveway that jutted out into the bay. This ancillary feature no longer exists. Therefore, the seaplane ramp and pier were once part of a larger bay shore resource that no longer retains integrity to convey its association to the overall Convair complex.

The pier and seaplane ramp structures were constructed in 1957 after Convair's period of peak performance in San Diego, which was before and during World War II (circa 1945). Both the seaplane ramp and pier no longer retain their original setting, feeling or association with the larger aircraft manufacturing complex. The setting, feeling and association aspects of integrity are the most significant for these types of resources as part of a larger complex. Additionally, the Convair complex has been altered to such a degree that no potential for a historic district exists. Therefore, the seaplane ramp and pier are not potential contributors to an eligible historic district for the Convair manufacturing company. Although both the seaplane ramp and the pier are associated with a historically significant aircraft company that played an important role in the local aircraft industry, neither of these resources individually embodies those events nor are they eligible as contributors to a larger district for the Convair complex. Therefore, both the seaplane ramp and pier are not eligible for the NRHP under Criterion A.

NRHP Criterion B. According to the Convair Lagoon Architectural Resources Evaluation and Assessment of Effects, no information of associations with the lives of significant persons exists for the seaplane ramp or the pier. Therefore, both the seaplane ramp and pier are not eligible for the NRHP under Criterion B.

NRHP Criterion C. Neither the seaplane ramp nor the pier embody distinctive characteristics, represent the work of a master, possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction. Therefore, the seaplane ramp and the pier are not eligible for the NRHP under Criterion C.

NRHP Criterion D. The seaplane ramp and the pier have not yielded information important in prehistory or history. Therefore, the seaplane ramp and the pier are not eligible for the NRHP under Criterion D.

California Register of Historical Resources Criteria. The CRHR program encourages public recognition and protection of resources of architectural, historical, archaeological and cultural significance, identifies historical resources for state and local planning purposes, determines eligibility for state historic preservation grant funding and affords certain protections under CEQA.

In order to be eligible for listing in the CRHR, a building must satisfy at least one of the following four criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States.
2. It is associated with the lives of persons important to local, California or national history.
3. It embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values.
4. It either has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

The CRHR Criteria parallel the criteria of the NRHP. As discussed above, the seaplane ramp and the pier do not meet any of the NRHP criteria. Therefore, the seaplane ramp and the pier do not meet the four CRHR criteria. The seaplane ramp and pier are not eligible for the CRHR.

City of San Diego Historical Board (SDHB). To be designated as historical by the City of San Diego Historical Resources Board, the site must meet any of the following criteria:

Criterion A: Exemplifies or reflects special elements of the City's, a community's or a neighborhood's historical, archaeological, cultural, social, economic, political, aesthetic, engineering, landscaping or architectural development.

Criterion B: Is identified with persons or events significant in local, state or national history.

Criterion C: Embodies distinctive characteristics of a style, type, period or method of construction or is a valuable example of the use of indigenous materials or craftsmanship.

Criterion D: Is representative of the notable work of a master builder, designer, architect, engineer, landscape architect, interior designer, artist or craftsman.

Criterion E: Is listed or has been determined eligible by the National Park Service for listing on the National Register of Historic Places or is listed or has been determined eligible by the State Historical Preservation Office for listing on the State Register of Historical Resources.

Criterion F: Is a finite group of resources related to one another in a clearly distinguishable way or is a geographically definable area or neighborhood containing improvements which have a special character, historical interest or aesthetic value or which represent one or more architectural periods or styles in the history and development of the City.

SDHB Criterion A. Both the seaplane ramp and the pier have the strongest potential for historic significance due to their association with the aircraft industry in San Diego. The aircraft industry in San Diego is significant for its contribution to several historic milestones in the aeronautics industry such as the construction of the *Spirit of St. Louis*, and the construction of the first spacecraft that orbited the earth. Both the pier and the seaplane ramp were part of a larger aircraft manufacturing complex that included several buildings, hangars, runways and testing sites for Convair. However, most of this complex has been redeveloped by the San Diego International Airport and has therefore lost its integrity as a larger historic district. The seaplane ramp was part of a larger structure that held a runway and other associated aircraft buildings and was used as a transport connector between the San Diego Bay and the aircraft road surface/runway on land. Today the visual relationship between the components of the complex has been compromised by the on-site chain link fence and the intrusion of the rental car parking lot to the west. Further, the seaplane ramp was originally equipped with a narrow ancillary structure that jutted out into the bay and was used for watercraft and seaplanes. This ancillary structure no longer exists. Therefore, the seaplane ramp and pier were once part of a larger bay shore resource that no longer retains integrity to convey its association with the overall Convair complex.

Both the seaplane ramp and pier no longer retain their original setting, feeling or association with the larger aircraft manufacturing complex. These aspects of integrity are the most significant for these types of resources as part of a larger complex. Additionally, the Convair complex has been altered to such a degree that no potential for a historic district exists. Therefore, the seaplane ramp and pier are not potential contributors to an eligible historic district related to the Convair manufacturing company. Although both resources are associated with a historically significant aircraft company that played an important role in the local aircraft industry, neither of those structures individually embody those events. Therefore, neither the seaplane ramp nor the pier, as contributors to a historic district or individually, is eligible for the local register of the City of San Diego under Criterion A.

SDHB Criterion B. According to the *Convair Lagoon Architectural Resources Evaluation and Assessment of Effects*, no information of associations with the lives of significant persons exists for the seaplane ramp or the pier. Therefore, neither the seaplane ramp nor the pier is eligible for the local register for the City of San Diego under Criterion B.

SDHB Criterion C. Neither the seaplane ramp nor the pier embody distinctive characteristics of an architectural style, type, or method of construction or are a valuable example of the use of indigenous materials or craftsmanship. Therefore, neither the seaplane ramp nor the pier is eligible for the local register for the City of San Diego under Criterion C.

SDHB Criterion D. The Convair seaplane ramp and pier were constructed by the aviation company Convair. According to the *Convair Lagoon Architectural Resources Evaluation and Assessment of Effects*, no architect is associated with these structures. Therefore, neither the seaplane ramp nor the pier is eligible for the local register for the City of San Diego under Criterion D.

SDHB Criterion E. As discussed above, neither the seaplane ramp nor the pier are eligible for the NRHP or CRHP. Therefore, neither the seaplane ramp nor pier is eligible for the local register for the City of San Diego under Criterion E.

SDHB Criterion F. The seaplane ramp and the pier were part of a larger bay shore resource complex of buildings associated with the seaplane aircraft manufacturing sector of Convair. However, this larger bay shore resource has been largely redeveloped. The remaining components which include the seaplane ramp and pier do not retain enough integrity in association, setting and feeling to convey their significance as resources to a historic district. Therefore, neither the seaplane ramp nor the pier is eligible for the local register for the City of San Diego under Criterion F.

Neither the seaplane ramp nor the pier are eligible for the NRHP, the CRHR, or the local register for the City of San Diego. Therefore, the seaplane ramp and the pier are not considered historical resources for the purposes of CEQA. Since it would not result in a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines section 15064.5, the Convair Lagoon Alternative would not result in a significant impact to a historical resource.

Threshold 5.10.5.2: Archaeological Resources. PRC section 21083.2 defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

As part of the Convair Lagoon Architectural Resource Evaluation and Assessment of Effects (Appendix K), a records search was conducted by SCIC. The SCIC records search included an evaluation of reports listed in the National Archaeological Database. No archaeological resources were identified on the project site or with the 0.5 mile search radius. However, natural bay sediments, which could contain ~~archeological~~ archaeological resources, underlie the area proposed for the containment barrier. Excavation activities associated with construction of the containment barrier could potentially impact ~~archeological~~ archaeological resources. As described in the Initial Study for the Shipyard Sediment Site Project, included as Appendix A to this EIR, in the event that an archaeological resource is found during implementation of this alternative, the contractor will immediately cease all construction at the place of discovery and a qualified archaeologist will evaluate the find. If the archaeologist determines that potentially significant archaeological materials are encountered, the archaeologist will recover, retrieve, and/or remove any archaeological materials. The archaeologist will provide a copy of documentation of all recovered data and materials found on site to the regional information center of the California Archaeological Inventory for inclusion in the permanent archives and another copy shall accompany any recorded archaeological materials data.

Threshold 5.10.5.3: Paleontological Resources. For the purposes of this EIR, a unique paleontological resource is any fossil or assemblage of fossils, paleontological resource site, or formation that meets any one of the following criteria:

1. Is the best example of its kind locally or regionally?
2. Illustrates a life-based geologic principle (i.e., faunal succession).
3. Provides a critical piece of paleobiological data (illustrates a portion of geologic history or provides evolutionary, paleoclimatic, paleoecological, paleoenvironmental or biochronological data).
4. Encompasses any part of a “type locality” of a fossil or formation.
5. Contains a unique or particularly unusual assemblage of fossils.
6. Occupies a unique position stratigraphically within a formation.
7. Occupies a unique position, proximally, distally or laterally within a formation’s extent or distribution.

The Convair Lagoon Alternative site was originally mudflats and open water of the San Diego Bay. Decades of dredging and placement of fill soils have resulted in the surrounding land area. The near-surface soil layers of the Convair Lagoon site consist of imported sand as fill used to cap PCB contaminated sediments and recent bay deposits. Recent bay deposits underlie the sand cap and PCB contaminated sediment. Bay deposit materials typically consist of interlayered dark gray, wet, loose, fine silty sand and silt and soft, sandy clay. Old paralic deposits underlie the bay deposits and typically consist of medium dense sand and stiff clay. Both bay deposits and old paralic deposits have a high potential for paleontological resources to occur (CSD, 2007). Excavation and dredging activities have the potential to impact soil units that may contain paleontological resources. However, as described in the Initial Study for the Shipyard Sediment Site Project and included as Appendix A to this EIR, in the event that an paleontological resource is found during implementation of this alternative, the contractor will immediately cease all construction at the place of discovery and a qualified paleontologist will evaluate the find. If the paleontologist determines that potentially significant paleontological materials are encountered, the paleontologist will recover, retrieve, and/or remove any archaeological or paleontological materials in a method consistent with current laws and regulations.

Threshold 5.10.5.4: Human Remains. Section 15064.5(d) and (e) of the CEQA Guidelines assign special importance to human remains and specify procedures to be used when Native American remains are discovered. These procedures are detailed under PRC section 5097.98, which outlines notification procedures in the event of a discovery of Native American human remains.

The Convair Lagoon Alternative site is located in an area that was originally an open water portion of the San Diego Bay underlain by natural bay sediments. There is a potential for human remains to occur in the natural sediments of the site, which would be disturbed during excavation of materials for the containment structure. However, in the event that human remains were discovered on the site during construction activities, construction activities would be required to comply with the applicable federal, state and local regulations related to human remains. For example, Native American human burials have specific provisions for treatment in Public Resources Code section 5097, as amended by Assembly Bill 2641, which addresses the disposition of Native American burials, protects such remains, and establishes the California Native American Heritage Commission to resolve any related disputes. Additionally, the California Native American Graves Protection and Repatriation Act require repatriation of Native American human remains and funerary items that are held by state agencies and museums. The California Health and Safety Code section 7050.5 has specific provisions for the protection of human burial remains, Native American or otherwise, if they are discovered. California Health and Safety Code section 7050.5 requires that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlay adjacent remains, until the County Coroner has examined the remains. In addition, any person who mutilates or disinters, wantonly disturbs, or willfully removes human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor criminal offense. The Convair Lagoon Alternative would comply with all applicable regulations related to the inadvertent discovery of human remains. Compliance with regulations pertaining to the discovery of human remains would result in a less than significant impact related to this resource. With regard to potential human remains impacts associated with the dredging operations at the Shipyard Sediment site, refer to Appendix A, Initial Study, of this EIR.

Potentially Significant Impacts

No significant impacts would occur to cultural resources, ~~archeological~~ archaeological resources, paleontological resources or human remains from implementation of the Convair Lagoon Alternative. All impacts would be less than significant prior to mitigation.

Mitigation Measures

No significant impacts would occur to cultural resources, ~~archeological~~ archaeological resources, paleontological resources or human remains from implementation of the Convair Lagoon Alternative. Therefore, no mitigation measures are required.

Cumulative Impacts

The geographic scope of the cumulative impact analysis for cultural resources varies depending on the type of cultural resource that could be impacted. The geographic scope for each of the four cultural resources topic areas is described below as part of the cumulative impact discussion for each of the topics.

Threshold 5.10.5.1: Historical Resources. For the purpose of this EIR, the geographic scope for the cumulative analysis of historic resources includes the historical aircraft manufacturing complex associated with the Teledyne Ryan and a separate manufacturing complex associated with the Convair company. Past cumulative project redevelopment in the Teledyne Ryan manufacturing complex area has resulted in the demolition of the majority of the buildings and structures from this complex. Additionally, past cumulative project redevelopment in the area surrounding the Convair Lagoon Alternative site has resulted in the demolition of the majority of buildings and structures associated with the Convair complex. The past demolition of these historic resources has resulted in a significant cumulative impact. As discussed above, the Convair Lagoon Alternative Site would result in the demolition of a seaplane ramp and pier. The Convair complex has been altered to such a degree by past cumulative development that no potential for a Convair historic district exists. Therefore, the seaplane ramp and pier are not potential contributors to an eligible historic district related to the Convair manufacturing company and demolition of these structures would not result in a cumulatively considerable contribution to this historical resources impact.

Threshold 5.10.5.2: Archaeological Resources. The geographic scope for the cumulative analysis of archaeological resources encompasses the city of San Diego and lands under the jurisdiction of the San Diego Unified Port District (District) because the native people that lived near San Diego Bay are associated with this geographic area. Specific cumulative projects are identified in Table 5-8, Cumulative Projects in the Vicinity of Convair Lagoon Alternative. The city of San Diego and lands under the jurisdiction of the District have a high to low potential for ~~archeological~~ archaeological resources to occur. The development of cumulative projects, such as the West-Side Ground Transportation Project 5 which would construct a new parking structure, would require excavation activities or other ground disturbance activities which could result in significant impacts to archaeological resources. Therefore, the cumulative impact to archaeological resources due to cumulative development is significant. As discussed above, implementation of the Convair Lagoon Alternative would have no impact on ~~archeological~~ archaeological resources because in the event that an archaeological resource is found during implementation of this alternative, the contractor will immediately cease all construction at the place of discovery and a qualified archaeologist will evaluate the find as described in the Initial Study for the project found in Appendix A. Therefore, construction of the Convair Lagoon Alternative would not result in a cumulatively considerable contribution to the cumulative archaeological resources impact.

Threshold 5.10.5.3: Paleontological Resources. The geographic context for the analysis of cumulative impacts to paleontological resources encompasses the paleontological sensitive geologic formations within the city of San Diego and the District. Excavation activities associated with land development within these areas could have significant impacts to paleontological resources. For example, and as listed in Table 5-8, Cumulative Projects in the Vicinity of Convair Lagoon Alternative, cumulative projects such as the Thomas Jefferson School of Law project involved, or would involve, ground disturbing construction activities that resulted in the discovery of significant paleontological resources. Therefore, the cumulative impact to paleontological resources caused by excavation activities associated with cumulative development within the regional cumulative impact area is significant. However, the Convair Lagoon Alternative would not result in impacts to paleontological resources because in the event that paleontological resources are found during implementation of this alternative, the contractor will immediately cease all construction at the place of discovery and a qualified paleontologist will evaluate the find as described in the Initial Study for the project found in Appendix A. Therefore the Convair Lagoon Alternative would not result in a cumulatively considerable contribution to the cumulative significant impact.

Threshold 5.10.5.4: Human Remains. The geographic scope for the cumulative analysis of human resources encompasses the city of San Diego and lands under the jurisdiction of the District because the native people that lived near San Diego Bay are associated with this geographic area. Cumulative projects, including those identified in Table 5-8, Cumulative Projects in the Vicinity of Convair Lagoon Alternative, in the region have the potential to impact human remains due to grading, excavation or other ground-disturbing activities. However, all cumulative projects, including the Convair Lagoon Alternative would be required to comply with PRC 5097.98 and California Health and Safety Code 7050.5. Compliance with these regulations would result in a less than significant cumulative human remains impact from cumulative projects. Therefore, the Convair Lagoon Alternative would not result in a significant cumulative human remains impact.

Level of Significance After Mitigation

No significant impacts would occur to cultural resources, ~~archeological~~ archaeological resources, paleontological resources or human remains from implementation of the Convair Lagoon Alternative. Without mitigation, all impacts remain less than significant.

Significant and Unavoidable Adverse Impacts

No significant and unavoidable impacts would occur to cultural resources, ~~archeological~~archaeological resources, paleontological resources or human remains from implementation of the Convair Lagoon Alternative.

Figure 5-10: Convair Seaplane Ramp and Convair Pier

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5.10.6 Geology and Soils

This section of the analysis describes the existing geology, soils, and seismic conditions on the Convair Lagoon Alternative Site and analyzes the potential physical environmental effects related to seismic hazards and geologic conditions. Potential effects of soil conditions on air and water quality as a result of construction-related activities are discussed in Section 5.10.3, Air Quality, and Section 5.10.9, Hydrology and Water Quality, respectively. This section is based on the information provided in the *Geology and Soils Evaluation for the Convair Lagoon Shipyard Sediment Alternative Analysis* (Ninyo and Moore, 2011a), which is included as Appendix L of this EIR.

5.10.6.1 Existing Environmental Setting

The following section describes the regional geologic setting, site geology, and faulting and seismicity issues related to the Convair Lagoon Alternative site.

Regional Geologic Setting

The Convair Lagoon Alternative site is situated in the coastal section of the Peninsular Ranges Geomorphic Province. This geomorphic province encompasses an area that extends approximately 900 miles from the Transverse Ranges and the Los Angeles Basin south to the southern tip of Baja California. The province varies in width from approximately 30 to 100 miles. In general, the province consists of rugged mountains underlain by Jurassic-age metavolcanic and metasedimentary rocks, and Cretaceous-age igneous rock of what is known as the southern California batholith. The westernmost portion of the province in San Diego County, which includes the Convair Lagoon site, consists generally of a dissected coastal plain underlain by Upper Cretaceous, Tertiary, and Quaternary-age sediments.

The Peninsular Ranges Province is traversed by a group of sub-parallel faults and fault zones generally trending in northwest/southeast direction. As shown in Figure 5-11, the site, like much of San Diego, is located near the active Rose Canyon fault zone. The Elsinore, San Jacinto, and San Andreas faults are major active fault systems located northeast of the Convair Lagoon site and the Coronado Bank, San Diego Trough, and San Clemente faults are active faults located west of the site. Major tectonic activity associated with these and other faults within this regional tectonic framework consists primarily of right-lateral, strike-slip movement.

Site Geology

The Convair Lagoon site is underlain by fill material and bay deposits. The fill material and bay deposits are underlain by Pleistocene-age old paralic deposits. Fill material on the site includes sand that was placed as part of a contaminated sediment capping operation in the 1990s. Bay deposits consist of interlayered dark gray, wet to saturated, very loose to loose, silty fine sand and silt, and soft, sandy clay. Old paralic deposits typically consist of medium dense sand and stiff clay.

Faulting and Seismicity

The Convair Lagoon site is located in a seismically active area. The closest known major active fault (i.e., a fault that exhibits evidence of ground displacement within the last 11,000 years) to the site is the Spanish Bight Fault, an element of the Rose Canyon Fault. Both the Spanish Bight Fault and the Rose Canyon Fault are capable of generating a maximum moment magnitude earthquake of 7.2. Figure 5-11 identifies the approximate location of the Convair Lagoon site with respect to the regional active faults.

Ground Shaking. Ground shaking is the earthquake effect that produces the vast majority of damage. Several factors control how ground motion interacts with structures, making the hazard of ground shaking difficult to predict. Earthquakes, or earthquake induced landslides, can cause damage near and far from fault lines. The potential damage to public and private buildings and infrastructure can threaten public safety and result in significant economic loss. Ground shaking is the most common effect of earthquakes that adversely affects people, animals, and constructed improvements. Seismic waves propagating through the earth's crust are responsible for the ground vibrations normally felt during an earthquake. Seismic waves can vibrate in any direction, and at different frequencies, depending on the frequency content of the earthquake rupture mechanism and the path and material through which the waves are propagating. The earthquake rupture mechanism is the distance from the earthquake source, or epicenter, to an affected site.

Table 5-30 provides a list of known active faults that may affect the Convair Lagoon site and the maximum moment magnitude that would occur at the site from a seismic event. The nearest known active fault to the Convair Lagoon is the Spanish Bight Fault, an element of the Rose Canyon Fault. The Spanish Bight Fault intersects the southwestern boundary of the Convair Lagoon site.

Table 5-30: Active Faults near Convair Lagoon

Fault	Approximate Distance miles (km)	Maximum Moment Magnitude (M_{max})
Spanish Bight	0 (0)	7.2
Rose Canyon	0.7 (1.2)	7.2
Coronado Bank	12 (20)	7.6
Newport-Inglewood (Offshore)	33 (53)	7.3
Elsinore (Julian Segment)	42 (67)	7.1
Elsinore (Temecula Segment)	46 (74)	6.8
Earthquake Valley	47 (76)	6.5
Elsinore (Coyote Mountain Segment)	51 (82)	6.8
Palos Verdes	58 (94)	7.3

Source: Ninyo and Moore, 2011

Fault Rupture. During earthquakes, the ground can rupture at or below the surface. Ground rupture occurs when two lithospheric plates heave past each other, sending waves of motion across the earth. The lithosphere is approximately 75 miles thick and consists of the upper continental and oceanic crusts and the rigid mantle layer that is directly beneath the crust. Earthquakes can cause large vertical and/or horizontal displacement of the ground along the fault. Ground rupture can completely demolish structures by rupturing foundations or by tilting foundation slabs and walls, as well as damage buried and above ground utilities. Drinking water can be lost, and the loss of water lines or water pressure can affect emergency services, including fire fighting ability.

As shown on Figures 5.10.6-2, the western portion of the Convair Lagoon site is located within a California-designated Earthquake Fault Zone (formerly known as an Alquist-Priolo Special Studies Zone) and a San Diego designated fault study zone. The portion of the Rose Canyon fault that intersects the southwestern boundary of the Convair Lagoon site is known as the Spanish Bight Fault strand. The Spanish Bight Fault strand is recognized as active and trends in a north/south direction towards the site through San Diego Bay. Ground surface rupture due to active faulting is possible at the Convair Lagoon site due to the presence of the Spanish Bight Fault at the southwestern boundary of the site. Additionally, lurching or cracking of the ground surface as a result of nearby seismic events is possible.

Liquefaction. Liquefaction occurs primarily in saturated, loose, fine to medium-grained soils in areas where the groundwater table is generally 50 feet or less below the surface. When these sediments are shaken during an earthquake, a sudden increase in pore water pressure causes the soils to lose strength and behave as a liquid. In general, three types of lateral ground displacement are generated from liquefaction: 1) flow failure, which generally occurs on steeper slopes; 2) lateral spread, which generally occurs on gentle slopes; and 3) ground oscillation, which occurs on relatively flat ground. In addition, surface improvements on liquefiable areas may be prone to settlement and related damage in the event of a large earthquake on a regionally active fault. The primary factors that control the type of failure that is induced by liquefaction (if any) include slope, and the density, continuity, and depth of the liquefiable layer.

Adverse effects of liquefaction include:

1. Loss of bearing strength so that the ground loses its ability to support structures. Structures can be left leaning or they can collapse.
2. Lateral spreading where the ground can slide on a buried liquefied layer. Buildings, roads, pipelines and other structures can be damaged.
3. Sand boils of sand-laden water can be ejected from a buried liquefied layer and erupt at the surface. The surrounding ground often fractures and settles.

4. Ground oscillation so that the surface layer, riding on a buried liquefied layer, is thrown back and forth by the shaking and can be severely deformed. Land containing walkways, roads, highways, and structures can all be shaken, broken, damaged and/or destroyed.
5. Flotation to the surface of light-weight structures that are buried in the ground (e.g., pipelines, sewers, and nearly empty fuel tanks).
6. Settlement when liquefied ground re-consolidates following an earthquake.

Lateral Spreading. Lateral spreading is a shallow, water-saturated landslide deformation often triggered from seismically induced liquefaction. Lateral spread of the ground surface during an earthquake usually takes place along weak shear zones that have formed within a liquefiable soil layer. Lateral spread has generally been observed to take place in the direction of a free-face (e.g., retaining wall, slope, channel) but has also been observed to a lesser extent on ground surfaces with gentle slopes. Other factors such as earthquake magnitude, distance from the causative fault, thickness of the liquefiable layers, and particle sizes of the liquefiable layers also influence the amount of lateral ground displacement.

Landsliding. Landslides can be caused by ground shaking from an earthquake or water from rainfall, septic systems, landscaping, or other origins that infiltrate slopes with unstable material. Boulder-strewn hillsides can pose a boulder-rolling hazard.

Expansive Soils. Certain types of clay soils expand when they are saturated and shrink when dried. These are called expansive soils, and can pose a threat to the integrity of structures built on them without proper engineering. Expansive soils are derived primarily from weathering of feldspar minerals and volcanic ash. Expansive soils generally result from specific clay minerals that have the capacity to shrink or swell in response to changes in moisture content.

Corrosive Soils. Caltrans corrosion criteria define corrosive soils as soils with more than 500 parts per million chlorides, more than 0.2 percent sulfates, or a pH less than 5.5.

Compressive Soils. Compressible soils, like expansive soils, result from specific clay minerals or loose granular materials that have the capacity to shrink or compress in response to changes in moisture content or new loads.

Collapsible Soils. Collapsible soils are those that appear to be strong and stable in their natural state, but which rapidly consolidate under wetting, generating large and often unexpected settlements. This can yield disastrous consequences for structures unwittingly built on such deposits. Such soils are often termed "collapsible" and the process of their collapsing is called "hydro-collapse" (Swan, 2011).

5.10.6.2 Regulatory Setting

Federal

U.S. Geological Survey (USGS) Landslide Hazard Program. In fulfillment of the requirements of Public Law 106-113, the USGS created the Landslide Hazard Program in the mid-1970s. According to USGS, the primary objective of the National Landslide Hazards Program (LHP) is to reduce long-term losses from landslide hazards by improving our understanding of the causes of ground failure and suggesting mitigation strategies. The Federal government takes the lead role in funding and conducting this research, whereas the reduction of losses due to geologic hazards is primarily a state and local responsibility. In San Diego County, the Unified Disaster Council (UDC) is the governing body of the Unified San Diego County Emergency Services Organization. The primary purpose of the UDC and the Emergency Services Organization is to provide for the coordination of plans and programs designed for the protection of life and property in the County of San Diego.

State

Alquist-Priolo (AP) Earthquake Fault Zoning Act. The California Legislature passed this law in 1972 to help identify areas subject to severe ground shaking. This state law requires that proposed developments incorporating tracts of four or more dwelling units investigate the potential for ground rupture within AP zones. These zones serve as an official notification of the probability of ground rupture during future earthquakes. Where such zones are designated, no building may be constructed on the line of the fault, and before any construction is allowed, a geologic study must be conducted to determine the locations of all active fault lines in the zone.

California Building Code. The CBC provides a minimum standard for building design. Chapter 16 of the 2010 CBC contains specific requirements for seismic safety. Chapter 18 of the 2010 CBC regulates excavation, foundations, and retaining walls. Chapter 33 of the 2010 CBC contains specific requirements pertaining to site demolition, excavation, and construction to protect people and property from hazards associated with excavation cave-ins and falling debris or construction materials. Appendix sections J109 and J110 of the 2010 CBC regulate grading activities, including drainage and erosion control. Construction activities are subject to occupational safety standards for excavation, shoring, and trenching as specified in California Occupational Safety and Health Administration (Cal/OSHA) regulations (Title 8 of the California Code of Regulations [CCR]) and in Appendix sections J106 and J107 of the 2010 CBC.

Seismic Hazards Mapping Act. Part of the California Public Resources Code, this Act was passed by the state Legislature in 1990 to address non-surface fault rupture earthquake hazards, including liquefaction and seismically induced landslides. Guidelines for Evaluation and Mitigating Seismic Hazards in California (Special Publication 117) were adopted by the state Mining and Geology Board on March 13, 1997 (revised and re-adopted on September 11, 2008 as Special Publication 117a) in accordance with the Seismic Hazards Mapping Act of 1990. The publication contains the guidelines for evaluating seismic hazards other than surface fault rupture (landslides and liquefaction), and for recommending mitigation measures to minimize impacts. A lead agency may determine when the investigation required by the guidelines and the Seismic Hazards Mapping Act would occur for a project.

5.10.6.3 Methodology

Ninyo & Moore evaluated the geologic and soil conditions for the Convair Lagoon Alternative site in April 2011. The results of this evaluation are provided in the report *Geology and Soils Evaluation for the Convair Lagoon Shipyard Sediment Alternative Analysis*, included as Appendix L of this EIR. The Ninyo and Moore geology and soils evaluation of the Convair Lagoon Site was based on a geologic reconnaissance, reviews of published and unpublished geologic and geotechnical reports, aerial photographs, in-house data, and an assessment of the potential geologic hazards. The methodology used in the evaluation estimated the potential for impacts to the site to occur from geologic or soils conditions on or in close proximity to the site, and discusses measures that might be considered during project design to reduce or mitigate the potential impacts with respect to the development of the Convair Lagoon Alternative.

5.10.6.4 Thresholds of Significance

Threshold 5.10.6.1: Exposure to Seismic-Related Hazards. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant impact if it would expose people or structures to potential substantial adverse impacts, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent AP Earthquake Fault Zoning Map issued by the state Geologist or based on other substantial evidence of a known fault; strong seismic ground shaking; or seismic-related ground failure, including liquefaction or landslides.

Fault Rupture. Specifically, the Convair Lagoon Alternative would result in a significant impact from fault rupture if any building or structure to be used for human occupancy would occur over or within 50 feet of the trace of an AP Fault. A significant impact could also occur if a confinement structure was compromised as a result of fault rupture resulting in leakage of contaminated sediments into San Diego Bay.

Seismic Ground Shaking. The Convair Lagoon Alternative would result in a significant impact from ground shaking if any building or structure to be used for human occupancy is located within Seismic Design Category E and F of the CBC and does not conform to the CBC. A significant impact could also occur if a confinement structure was compromised as a result of seismic ground shaking resulting in leakage of contaminated sediments into San Diego Bay.

Ground Failure. The Convair Lagoon Alternative would have the potential to expose people or structures to substantial adverse effects from liquefaction if:

a. Areas proposed for development contain potentially liquefiable soils;
b. The potentially liquefiable soils are saturated or have the potential to become saturated; or
c. In-situ soil densities are not sufficiently high to preclude liquefaction.

Landslides. The Convair Lagoon Alternative would result in a significant impact from landslide risk if:

a. It would expose people or structures to substantial adverse effects, including the risk of loss, injury, or death involving landslides;
b. It is located on a geologic unit or soil that is unstable, or would become unstable as a result of the proposed project, potentially resulting in an on- or off-site landslide; or
c. It lies directly below or on a known area subject to rockfall which would result in collapse of structures.

Threshold 5.10.6.2: Soil Erosion and Topsoil Loss. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant impact if it would result in substantial soil erosion or loss of topsoil from construction or operational activities.

Threshold 5.10.6.3: Soil Stability. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a potentially significant impact if it would be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the land use designation, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

Threshold 5.10.6.4: Expansive Soils. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant impact if it would be located on expansive soil, as defined in section 1802A.3.2 of the CBC, creating substantial risks to life or property.

Threshold 5.10.6.5: Alternative Waste Water Disposal Systems. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant impact if it would have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

5.10.6.5 Impacts and Mitigation Measures

Less Than Significant Impacts

Threshold 5.10.6.2: Soil Erosion and Topsoil Loss. Topsoil is the uppermost layer of soil, usually comprised of the top six to eight inches. It has the highest concentration of organic matter and microorganisms, and is where most biological soil activity occurs. Plants generally concentrate their roots in, and obtain most of their nutrients from, this layer of soil. Topsoil erosion is of concern when the topsoil layer is blown or washed away. This creates an environment that doesn't support the plants and animals otherwise present in topsoil and disrupts the food chain and local ecosystem. It can also increase the rate of pollutants that become delivered to watersheds. Erosion can occur as a result of, and can be accelerated by, construction and operational activities associated with the Convair Lagoon Alternative. The following discussion describes potential erosion impacts from construction and operation of the Convair Lagoon Alternative. Refer to Section 4.2, Water Quality, of this EIR for impacts related to soil erosion and topsoil loss from dredging and dewatering activities at the Shipyard Sediment Site.

Construction Activities. The demolition, excavation, soil importation and soil stockpiling operations associated with construction of the Convair Lagoon Alternative would have the potential to expose soils to wind and surface water runoff related erosion. However, all construction activities occurring under the Convair Lagoon Alternative would be required to comply with CBC, which would ensure implementation of appropriate measures during grading and construction activities to reduce soil erosion. Additionally, construction activities would be required to comply with the General Construction Permit, which requires stormwater pollution prevention plans (SWPPPs) to be prepared and implemented, and best management practices (BMPs) to be identified for construction sites greater than one acre. Implementation of appropriate BMPs would protect water quality by controlling storm water runoff and erosion and ensuring that the quality of storm water flows meets the applicable requirements of the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board). Additionally, because the Convair Lagoon Alternative site is under the jurisdiction of the San Diego Unified Port District (District), it must comply with the District's Jurisdictional Standard Urban Stromwater Mitigation Planning Document (JURMP). One requirement of the JURMP is to prepare and implement an Urban Stormwater Mitigation Plan (USMP). In general, the USMP conveys the process used to identify pollutants of concern, conditions of concern, and BMPs to control/reduce runoff volume and its associated pollutants. BMP maintenance requirements are also addressed to ensure consistent pollution prevention performance. Compliance with these regulations during construction activities would result in a less than significant impact to erosion and topsoil loss from implementation of the Convair Lagoon Alternative.

Operational Activities. Currently, Convair Lagoon consists of submerged land. The site is underlain by fill material and bay deposits. The fill material and bay deposits are underlain by Pleistocene-age old paralic deposits. The fill material on the site was placed as part of a capping operation in the 1990s. According to the *Geology and Soils Evaluation for the Convair Lagoon Shipyard Sediment Alternative Analysis* (Ninyo and Moore, 2011), the existing soil conditions are classified as soft ground or loose soil, which may have the potential for increased erosion. However, as part of the Convair Lagoon Alternative, the existing soils on site would be covered with dredged material from the Shipyard Sediment site and capped with 9 inches of clean, compacted, imported fill material and a three-inch asphalt layer above the imported fill material. The capping fill material and asphalt layer associated with implementation of the Convair Lagoon Alternative would reduce the potential for soil erosion to occur on the site to a level below significance. Therefore, the Convair Lagoon Alternative would not result in substantial soil erosion or loss of topsoil from operational activities.

Threshold 5.10.6.4: Expansive Soils. Existing soils on the Convair Lagoon site have a moderate to high potential for expansion. As part of the Convair Lagoon Alternative, dredged and imported fill materials would be placed in the lagoon to raise the site grade. Based on the dredge source (contaminated sediment from the San Diego Bay), dredged materials that would be placed in the Convair Lagoon site as fill would likely be granular. Sand capping import materials would also likely be granular. Granular materials have low potential for expansion. Implementation of the Convair Lagoon Alternative would result in the existing soils on the site being buried under dredged fill, sand and asphalt, which have low potential for expansion. The addition of dredged fill and the sand cap would mitigate the moderate to high potential for existing soils to expand because soils would remain saturated and would be located at relatively deep depths. Therefore, implementation of the Convair Lagoon Alternative would result in less than significant impacts related to expansive soils.

Threshold 5.10.6.5: Wastewater. The Convair Lagoon Alternative would not construct any residential, commercial, industrial or institutional development that would require wastewater treatment. Upon completion of construction, the site would consist of an undeveloped, above-ground parcel of land with no structures or wastewater infrastructure. The Convair Lagoon Alternative would not create any wastewater treatment demand and would not involve the use of septic tanks or other alternative wastewater disposal systems. Therefore, no impact would occur.

Potentially Significant Impacts

Threshold 5.10.6.1: Exposure to Seismic-Related Hazards. The various types of geologic hazards that could occur from seismic-related events are described in detail below.

Fault Rupture. During earthquakes, the ground can rupture at or below the surface. Ground rupture occurs when two lithosphere plates heave past each other, sending waves of motion across the earth. The Spanish Bight Fault intersects the southwestern boundary of the Convair Lagoon alternative site. As a result, the western portion of the site is within both a California-designated Earthquake Fault Zone (formerly known as an Alquist-Priolo Special Studies Zone) and a San Diego-designated fault zone. Ground surface rupture due to active faulting is possible on the Convair Lagoon Alternative site due to the presence of the Spanish Bight Fault strand. Lurching or cracking of the ground surface as a result of nearby seismic events is also possible. Fault rupture could affect the structural integrity of the proposed containment barrier, storm drains and asphalt pavement. This is a significant impact.

Seismic Ground Shaking. Ground shaking is the most common effect of earthquakes that adversely affects people and constructed improvements. The CBC defines different regions of the U.S. and ranks them according to their seismic hazard potential. All of San Diego County is located within Seismic Design Categories E and F, which have the highest seismic potential.

The closest known major active fault to the Convair Lagoon Alternative site is the Rose Canyon Fault. Specifically, the Spanish Bight Fault, an element of the Rose Canyon Fault, intersects the southwestern boundary of the Convair Lagoon Alternative site. Due to the presence of this fault, the Convair Lagoon site has a high potential for strong ground motions due to earthquakes on nearby active faults. Table 5-30 provides a list of known active faults that may affect the Convair Lagoon site and the maximum moment magnitude that would occur at the site from a seismic event. The site has a high potential for strong ground motions due to earthquakes on adjacent and nearby active faults. Seismic ground shaking could affect the structural integrity of the proposed containment barrier, storm drains and asphalt pavement. This is a significant impact.

Liquefaction. Liquefaction occurs primarily in saturated, loose, fine to medium-grained soils in areas where the groundwater table is generally 50 feet or less below the surface. When these sediments are shaken during an earthquake, a sudden increase in pore water pressure can cause the soils to lose strength and behave as a liquid. Based on the relatively loose fill material and bay deposits underlying the Convair Lagoon site, the presence of shallow groundwater, and knowledge from previous evaluations of liquefaction near the Convair Lagoon Alternative site; soils underlying the site are subject to liquefaction or settlement during a nearby seismic event on a nearby fault. A liquefaction event could affect the structural integrity of the proposed containment barrier, storm drains and asphalt pavement because of the potential for seismic ground shaking described above. This is a significant impact.

Landslides. Landslides can be caused by ground shaking from an earthquake or water from rainfall, septic systems, landscaping, or other origins that infiltrate slopes with unstable material. Boulder-strewn hillsides can pose a boulder-rolling hazard from ground shaking, blasting or a gradual loosening of their contact with the surface. No landslides or related features underlie or are adjacent to the Convair Lagoon site. Therefore, the potential for landslides to occur is considered low and landslide impacts are less than significant.

Threshold 5.10.6.3: Soil Stability. Soil stability risks that may result in geologic hazards are discussed individually below.

Landslides. According to the *Geology and Soils Evaluation for the Convair Lagoon Shipyard Sediment Alternative Analysis* (Ninyo and Moore, 2011), no landslides or related features underlie or are adjacent to the Convair Lagoon site and the potential for landslides to occur is low. Therefore, the Convair Lagoon Alternative would not be located on a geologic unit that would become unstable from landslides and impacts would be less than significant.

Lateral Spreading. Lateral spreading is a shallow, water-saturated landslide deformation often triggered from seismically induced liquefaction. Based on the proposed topography of the site upon completion, and the presence of potentially liquefiable layers in the underlying soil materials, the Convair Lagoon Alternative is considered to be potentially susceptible to seismically-induced lateral spread. Lateral spreading could affect the structural integrity of the proposed containment barrier, storm drains and asphalt pavement. This is a significant impact.

Hydro-Collapse. Groundwater on the Convair Lagoon Alternative site is approximately three feet above mean lower low water (MLLW), with fluctuations in groundwater occurring due to tidal variations, ground surface topography, subsurface geologic structure, rainfall, irrigation and other factors. Existing site soils within and overlying the zone of fluctuating groundwater within the Convair Lagoon Alternative site may be subject to hydro-collapse. Upon implementation of the Convair Lagoon Alternative, fill materials that would be placed within the zone of fluctuating groundwater may be subject to hydro-collapse. Hydro-collapse could affect the structural integrity of the proposed containment barrier, storm drains and asphalt pavement. This is a significant impact.

Compressible Soils. Compressible soils, like expansive soils, result from specific clay minerals or loose granular materials that have the capacity to shrink or compress in response to changes in moisture content or new loads. The existing fill and bay deposits underlying the site consist of silty sand, silt, and sandy clay are considered highly compressible. Compressible soils may lead to settlement of the site and could affect the structural integrity of the proposed containment barrier, storm drains and asphalt pavement. This is a significant impact.

Corrosive Soils. Caltrans corrosion (2003) criteria define corrosive soils as soils with more than 500 parts per million chlorides, more than 0.2 percent sulfates, or a pH less than 5.5. Due to the proximity of the marine environment to the Convair Lagoon site and the variability of the on-site soils, site soils are considered highly corrosive. The presence of corrosive soils and marine environment could affect the structural integrity of the proposed storm drain pipe. This is a significant impact.

Mitigation Measures

To mitigate the significant impacts related to fault rupture, ground shaking, liquefaction, lateral spreading, hydro-collapse, compressible soils and corrosive soils the following mitigation measure would be required, as recommended by Ninyo and Moore, soil engineering experts, in the *Geology and Soils Evaluation for the Convair Lagoon Shipyard Sediment Alternative Analysis* (Appendix L of this EIR):

Mitigation Measure 5.10.6.1: **Detailed Site-specific Geotechnical Investigation.** Prior to construction of the Convair Lagoon Alternative, a detailed site-specific geotechnical investigation will be conducted <u>by a qualified geologist retained by the applicant</u> to determine specific geologic recommendations for the development of the containment barrier and storm drains. Areas of hydro-collapse, soft ground, expansive soils, compressible soils, liquefaction, shallow groundwater, and corrosive soils will be identified as part of the geotechnical investigation. The investigation will specifically address the proposed containment barrier, storm drains, and asphalt improvement stability in these identified geologic hazard areas. The geotechnical investigation <u>shall be submitted to the San Diego Water Board for review and approval, prior to the issuance of a construction permit. The geotechnical investigation</u> will comply with the specifications provided in the Naval Facilities Engineering Command (NAVFAC), DM-7.2, Foundations and Earth Structures, dated September, as well as the City of San Diego Building Division plans and the City of San Diego Engineering Department local grading ordinances. Recommendations made in conjunction with the geotechnical investigations will be implemented during construction. The qualified geologist shall periodically confirm that these measures are being implemented, ~~,~~ including (as appropriate) but not necessarily limited to the following actions:

1. Over-excavate unsuitable materials associated with the confinement structure and replace them with imported engineered fill.
2. Confine unstable soils to deeper fill areas of the site.
3. Perform densification of soils in the area beneath the proposed containment structure through geotechnical engineering methods such as stone columns, compaction grouting, or deep dynamic compaction.
4. Select an engineering foundation design to accommodate the expected effects of liquefaction. Examples of types of foundation design that might be appropriate given the soil conditions include gravel bedding for the storm drain pipes and a pipe bell with flexibility to accommodate differential settlement.
5. Consider potential corrosion issues related to storm drain pipe degradation in the design of this improvement where it would contact corrosive soils or be subject to other corrosive forces.
6. Establish and implement a long-term monitoring and repair program to monitor the integrity of the asphalt, containment barrier and storm drains. Key features of the program include determination of the periodic review, the type of review, identification of potential problems that may occur in the future, and the methods that would be used to rectify any problems discovered.
7. The San Diego Water Board shall verify implementation of this mitigation measure.

Cumulative Impacts

The geographic scope of the cumulative impact analysis for geology and soils varies depending on the type of geological resource that could be impacted. The geographic scope for each of the five geology and soil topic areas is described below as part of the cumulative impact discussion for each of the topics.

Threshold 5.10.6.1: Exposure to Seismic Related Hazards. The geographic context for the analysis of impacts resulting from seismic ground shaking is generally site specific, rather than cumulative in nature, because each development site has unique geologic considerations that would be subject to uniform site development and construction standards. In this way, potential cumulative impacts resulting from seismic and soil conditions would be minimized on a site-by-site basis to the extent that modern construction methods and code requirements provide. The structural design for all of the cumulative projects identified in Table 5-8, Cumulative Projects in the Vicinity of Convair Lagoon Alternative, would be required to comply with all applicable public health, safety, and building design codes and regulations to reduce seismic and geologic hazards to an acceptable level. Cumulative project compliance with applicable regulations, such as the CBC, AP Earthquake Fault Zoning Act and Special Publication 117, would ensure that a significant cumulative impact would not occur. In addition, the implementation of Mitigation Measure 5.10.6.1 above would reduce the direct impacts of the Convair Lagoon Alternative to less than significant. Therefore, the Convair Lagoon Alternative would result in a less than significant cumulative impact related to seismic related hazards.

Threshold 5.10.6.2: Erosion and Topsoil Loss. The geographic scope of cumulative impact analysis for erosion and topsoil loss is the Lindbergh Hydrologic Subarea within the San Diego Mesa Hydrologic Area within the Pueblo San Diego Hydrologic Unit, the watershed in which the Convair Lagoon Alternative site is located. Cumulative projects located in this watershed would involve construction activities that could result in increased wind and water erosion from exposed soils. Cumulative development could also increase impermeable surfaces, which could alter the natural drainage of a site and result in excess siltation. However, cumulative projects would be subject to state and local runoff and erosion prevention requirements, including the applicable provisions of the General Construction Permit, BMPs, NPDES, JURMP, USMP and grading ordinances. These requirements are implemented as conditions of approval for development projects and are subject to continuing enforcement. Therefore, the Convair Lagoon Alternative would result in a less than significant cumulative impact related to runoff and erosion.

Threshold 5.10.6.3: Soil Instability. The geographic scope of the cumulative impact analysis for soil instability is limited to the immediate area of the geologic constraint and is generally site specific. When considering the impacts in a larger geographic context, CEQA requires a proposed project to undergo an analysis of the geologic and soil conditions applicable to the development site in question. As required by CEQA, measures would be implemented to mitigate potential impacts associated with unstable soils prior to implementation of a cumulative project. Typical measures to treat unstable soils involve removal and replacement with properly compacted fill, compaction grouting, or deep dynamic compaction. Additionally, cumulative projects would be required to comply with the CBC, which restricts and sets standards for development in areas subject to soil and slope instability. Due to the implementation of mitigation measure 5.10.6.1, CEQA requirements and CBC restrictions, the Convair Lagoon Alternative would result in a less than significant cumulative impact related to soil instability, liquefaction and subsidence.

Threshold 5.10.6.3: Expansive Soils. The geographic context for the analysis of impacts related to expansive soils is limited to the immediate area of the geologic constraint and is generally site specific. When considering the impacts in a larger geographic context, CEQA requires a proposed project to undergo analysis of the soil conditions applicable to the development site in question. As required by CEQA, measures would be implemented to mitigate potential impacts associated with expansive soils prior to implementation of a cumulative project. Typical measures to mitigate expansive soils involve removal, proper fill selection, and compaction. Additionally, cumulative projects would be required to comply with the CBC, which restricts and sets standards for development in areas subject to expansive soils. Due to CEQA requirements and CBC restrictions, the Convair Lagoon Alternative would result in less than significant cumulative impact related to expansive soils.

Threshold 5.10.6.3: Waste Water Disposal Systems. The geographic context for the analysis of impacts related to wastewater disposal systems is limited to the immediate area of the geologic constraint and is generally site specific. The Convair Lagoon Alternative is located in a highly developed, urban area that is served by municipal wastewater service systems. It is highly unlikely that the construction of any cumulative project in this area would require septic tanks or alternative waste water disposal systems. In the event a cumulative project would require a septic tank or alternative waste water system, jurisdictions have permit requirements pertaining to the design of the system and soil permeability characteristics for the construction and operation of these systems with the purpose of protecting public health and safety. Compliance with these permit requirements would reduce any project impacts to a level below significance. Because the Convair Lagoon Alternative would not cause or contribute to any impact on wastewater disposal systems, the project will have no cumulative impact related to wastewater disposal systems.

Level of Significance After Mitigation

With implementation of mitigation measure 5.10.6.1, all significant impacts would be reduced to a level below significance.

Significant and Unavoidable Adverse Impacts

No significant and unavoidable impacts would occur to geologic resources from implementation of the Convair Lagoon Alternative.

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Figure 5-11: Fault Locations

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Figure 5-12: Geological Hazards

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5.10.7 Greenhouse Gas Emissions/Climate Change

This section evaluates the potential for impacts related to greenhouse gas (GHG) emissions associated with implementation of the Convair Lagoon Alternative (Alternative). The information provided in this section is based on information published by the California Air Pollution Control Officers Association (CAPCOA), California Air Resources Board (CARB), the U.S. Environmental Protection Agency (EPA), and other sources, as cited throughout the section.

5.10.7.1 Existing Environmental Setting

Global Climate Change Overview

Climate change refers to any substantial change in measures of climate (such as temperature, precipitation, or wind) lasting for decades or longer. According to the EPA, the Earth's climate has changed many times during the planet's history, with events ranging from ice ages to long periods of warmth. Historically, natural factors such as volcanic eruptions, changes in the Earth's orbit, and the amount of energy released from the sun have affected the Earth's climate. Some GHGs, such as water vapor, occur naturally and are emitted to the atmosphere through natural processes, while others are emitted through human activities. Beginning late in the 18th century, human activities associated with the Industrial Revolution have changed the composition of the atmosphere and therefore very likely are influencing the Earth's climate. Over the past 200 years, the burning of fossil fuels, such as coal and oil, and deforestation has caused the concentrations of heat-trapping GHGs to increase substantially in the atmosphere.

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat-trapping effects of GHGs, the earth's temperature would be about 34 degrees Celsius (60 degrees Fahrenheit) cooler (California Climate Action Team [CCAT], 2007). However, it is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

The Global Carbon Project (2008) released an update of the global carbon budget for the year 2007. The atmospheric carbon dioxide (CO_2) concentration in 2007 was 383 parts per million (ppm), 37 percent above the concentration at the start of the Industrial Revolution (about 280 ppm in 1750). The 2007 concentration was the highest known atmospheric CO_2 concentration during the last 650,000 years and probably during the last 20 million years. Results show that anthropogenic CO_2 emissions have been growing about four times faster since 2000 than the previous decade. The annual mean growth rate of atmospheric CO_2 was 2.2 ppm per year in 2007, up from 1.8 ppm in 2006.

Greenhouse Gases

GHGs are gases that trap heat in the atmosphere, analogous to the way a greenhouse retains heat. Common GHGs include water vapor, CO_2, methane, nitrogen oxide (N_2O), chlorofluorocarbons (CFCs), hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. Global atmospheric concentrations of CO_2, methane, and N_2O have increased markedly as a result of human activities since the year 1750 and now far exceed pre-industrial values determined from ice cores spanning many thousands of years.

Individual GHGs have varying potential to contribute to global warming and atmospheric lifetimes. Table 5-31 identifies the global warming potentials and atmospheric lifetimes of basic GHGs. The reference gas for global warming potential is CO_2. GHG emissions and global warming potentials are compared in relation to CO_2. The CO_2 equivalent (CO_2e) is a consistent methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent measure. CO_2 has a global warming potential of one; by comparison, the global warming potential of methane is 21. This means that methane has a greater global warming effect than CO_2 on a molecule per molecule basis. One million metric tons (MT) of CO_2e represents the emissions of an individual GHG multiplied by its global warming potential.

Table 5-31: Global Warming Potentials and Atmospheric Lifetimes of Basic GHGs

GHG	Formula	100-year global warming potential[(1)]	Atmospheric lifetime (yrs)
Carbon dioxide	CO_2	1	50-200
Methane	CH_4	21	12
Nitrous oxide	N_2O	310	114
Sulphur hexafluoride	SF_6	23,900	3,200

[(1)] The warming effects over a 100-year time frame relative to CO_2
Source: EPA, 2011

State law defines GHGs to include the following compounds: CO_2, methane, N_2O, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (Health and Safety Code [HSC], section 38505(g)). Descriptions of these compounds and their sources are provided below.

Carbon Dioxide (CO_2). CO_2 enters the atmosphere through the burning of fossil fuels (e.g., oil, natural gas, and coal), solid waste, and trees and wood products, and as a result of other chemical reactions, such as those required to manufacture cement. Globally, the largest source of CO_2 emissions is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. CO_2 is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle. Billions of tons of atmospheric CO_2 are naturally removed from the atmosphere by oceans and growing plants, and are emitted back into the atmosphere annually through natural processes, also known as 'sources.' When in balance, the total CO_2 emissions and removals from the entire carbon cycle are roughly equal. Since the Industrial Revolution in the 1700s, human activities, including burning of oil, coal and gas and deforestation, have increased CO_2 concentrations in the atmosphere. In 2005, global atmospheric concentrations of CO_2 were 35 percent higher than they were before the Industrial Revolution (EPA, 2010).

Methane (CH_4). Methane is emitted from a variety of both human-related and natural sources. Human-related activities include fossil fuel production, animal husbandry, rice cultivation, biomass burning, and waste management. Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills. It is estimated that 60 percent of global methane emissions are related to human-related activities. Natural sources of methane include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources, such as wildfires. Methane emission levels from a particular source can vary significantly from one country or region to another, depending on many factors such as climate, industrial and agricultural production characteristics, energy types and usage, and waste management practices. For example, temperature and moisture have a significant effect on the anaerobic digestion process, which is one of the key biological processes that cause methane emissions in both human-related and natural sources. Also, the implementation of technologies to capture and utilize methane from sources such as landfills, coal mines, and manure management systems affects the emission levels from these sources (EPA, 2010).

Nitrous Oxide (N_2O). Nitrous oxide, more commonly known as "laughing gas," is produced naturally by microbial processes in soil and water. In addition to agricultural sources, some industrial processes, such as fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions, also contribute to its atmospheric load. It is used in rocket engines, racecars, and as an aerosol spray propellant. Global concentration of nitrous oxide in 1998 was 314 parts per billion (ppb) (EPA, 2010).

Fluorinated Gases. Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic, powerful GHGs that are emitted from a variety of industrial processes, including aluminum production, semiconductor manufacturing, electric power transmission, magnesium production and processing, and the production of Chlorodifluoromethane (HCFC-22), commonly used in air conditioning applications. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances, such as CFCs, Hydrochlorofluorocarbons (HCFCs), and halons. These gases are typically emitted in smaller quantities, but have higher global warming potential than other GHGs (EPA, 2011).

Global, National, Statewide, Countywide and Alternative Site GHG Inventories

In an effort to evaluate and reduce the potential adverse impact of global climate change, international, state and local organizations have conducted GHG inventories to estimate their levels of GHG emissions and removals. The following summarizes the results of these GHG inventories for global, national, state, countywide GHG emissions. The Convair Lagoon currently consists of open water, a paved asphalt area, a concrete pier, a concrete seawall, and an abandoned concrete sea plane marine ramp. The Alternative site does not include any existing sources of GHG emissions.

Global. Worldwide anthropogenic emissions of GHG in 2006 were approximately 49,000 million MT CO_2e, including ongoing emissions from industrial and agricultural sources and emissions from land use changes (e.g., deforestation, biomass decay) (Intergovernmental Panel on Climate Change [IPCC], 2007). CO_2 emissions from fossil fuel use accounts for 56.6 percent of the total emissions of 49,000 million MT CO_2e (includes land use changes) and all CO_2 emissions are 76.7 percent of the total. Methane emissions account for 14.3 percent and nitrous oxides emissions account for 7.9 percent of GHGs (IPCC, 2007).

United States. The EPA publication, *Draft Inventory of U.S. GHG Emissions and Sinks: 1990–2009,* provides a comprehensive emissions inventory of the nation's primary anthropogenic sources and sinks of GHG. Overall, total U.S. emissions rose by 13 percent from 1990 to 2008, while the U.S. gross domestic product (GDP) increased by 65 percent over the same period. Emissions decreased from 2008 to 2009, decreasing by six percent to 6,640 million MT CO_2e. GDP also decreased by three percent from 2008 to 2009. The publication indicated that the following factors were primary contributors to this decrease: 1) a decrease in economic output resulting in a decrease in energy consumption across all sectors, and 2) a decrease in the carbon intensity of fuels used to generate electricity due to fuel switching as the price of coal increased and the price of natural gas decreased significantly (EPA, 2011).

California. The state of California is a substantial contributor of GHGs to the global inventory. It is the second largest contributor in the U.S. and the 16th largest in the world. According to the CARB (2010), California generated 478 million MT CO_2e in 2008. GHG emissions in California are mainly associated with fossil fuel consumption in the transportation sector (37 percent). Electricity production, from both in-state and out-of-state sources, is the second-largest source of GHG emissions (24 percent). Industrial sources, agriculture, forestry, recycling and waste, commercial, and residential activities comprise the balance of California's GHG emissions. Emissions of GHG were offset slightly in 2008 by the sequestration (intake) of carbon within forests, reducing the overall emissions by 4 million MT CO_2e, resulting in net emissions of about 474 million MT CO_2e.

San Diego County. In addition to the California GHG Inventory, a more specific county-wide GHG inventory was prepared by the University of San Diego School of Law Energy Policy Initiative Center (EPIC) in 2008. This San Diego County GHG Inventory (SDCGHGI) is a detailed inventory that considers the unique characteristics of the region in calculating emissions. In 2006, a total of 34.4 million MT CO_2e was generated in the county of San Diego. This total includes both the incorporated and unincorporated areas. The largest contributor of GHGs was from the on-road transportation category, which comprised 46 percent (16 million MT CO_2e) of the total amount. The second highest contributor was the electricity category, which contributed 9 million MT CO_2e, or 25 percent of the total. Together the on-road transportation and electricity category comprised 71 percent of the total GHG emissions for the San Diego region. The remaining amount was contributed by natural gas consumption, civil aviation, industrial processes, off-road transportation, waste, agriculture, rail, water-borne navigation, and other fuels.

Regional Adverse Effects of Climate Change

The San Diego Foundation's Regional Focus 2050 Working Paper and Technical Assessment explored what the San Diego region would be like in the year 2050 if current climate change trends continue. The paper projected potential adverse effects on the San Diego region related to climate, energy needs, public health, wildfires, water supply, sea level, and ecosystems. The climate model simulations exhibited warming across San Diego County, ranging from about 1.5 °F to 4.5 °F, particularly in inland areas. Temperature changes for areas along the coast would be moderated by the influence of the Pacific Ocean. The increase in peak demand for electricity for cooling could result in blackouts and power outages without adequate planning. With an aging population, extreme-heat conditions in the San Diego region are also a public health concern. Other health concerns include increased ozone air pollution levels due to an increase in sunny days, which can exacerbate asthma and other respiratory and cardiovascular diseases; increased fire-related injuries and death as intense wildfires occur more frequently; and coastal algal blooms, which can harbor toxic bacteria and other diseases. Drought years might occur as much as 50 percent more often and be considerably drier. Even with plans in place to conserve, recycle, and augment our available water, it is estimated San Diego County could face an 18 percent shortfall in water supply by 2050. Rising sea levels will have a major impact on the San Diego region's environment and economy, particularly in coastal areas. High tide flooding will threaten low-lying coastal communities and impact military, port and airport operations. High surf events and rising sea levels will cause even greater coastal erosion. Climate change will also add to the pressures on the variety of habitats and species in the county. The locations where environmental conditions are suitable for a particular species will shift with climate change. To survive, some animals and plants will have to relocate to find new habitat or potentially face extinction.

5.10.7.2 Regulatory Setting

Federal

Clean Air Act. The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the EPA to establish National Ambient Air Quality Standards (NAAQS) with states retaining the option to adopt more stringent standards or to include other specific pollutants. On April 2, 2007, the Supreme Court found that CO_2 is an air pollutant covered by the CAA; however, no NAAQS have been established for CO_2.

Final Mandatory Reporting of GHG Rule. In September 2009, the EPA issued the Final Mandatory Reporting of GHG Rule. The rule requires reporting of GHG emissions from large sources and suppliers in the United States, and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 MT or more per year of GHG emissions are required to submit annual reports to EPA. The EPA estimates that the rule covers about 10,000 facilities nationwide, accounting for about 85 percent of GHG emissions in the United States.

State

Executive Order S-3-05. California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3-05, the following GHG emission reduction targets:

1. By 2010, California shall reduce GHG emissions to 2000 levels;
2. By 2020, California shall reduce GHG emissions to 1990 levels; and
3. By 2050, California shall reduce GHG emissions to 80 percent below 1990 levels.

The first CCAT Report to the Governor in 2006 contained recommendations and strategies to help meet the targets in Executive Order S-3-05. The latest CCAT Biennial Report was released in April 2010. It expands on the policy oriented 2006 assessment (CCAT, 2010a). This report provides new information and scientific findings. The new information and details in the CCAT Assessment Report include development of new climate and sea-level projections using new information and tools that have become available in the last two years; and evaluation of climate change within the context of broader social changes, such as land-use changes and demographic shifts (CCAT, 2010b). The action items in the report focus on the preparation of the Climate Change Adaptation Strategy (CAS), required by Executive Order S-13-08.

Assembly Bill 32, the California Global Warming Solutions Act of 2006. In September 2006, the California State Legislature adopted Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. AB 32 focuses on reducing GHG emissions in California. GHGs as defined under AB 32 include CO_2, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Under AB 32, the CARB has the primary responsibility for reducing GHG emissions and managing the CCAT to coordinate statewide efforts and promote strategies that can be undertaken by many other California agencies. AB 32 requires the CARB to adopt rules and regulations that would achieve GHG emissions equivalent to state-wide levels in 1990 by 2020. In general, AB 32 directs the CARB to do the following:

1. Make publicly available a list of discrete early action GHG emission reduction measures that can be implemented prior to the adoption of the statewide GHG limit and the measures required to achieve compliance with the statewide limit;
2. Make publicly available a GHG inventory for the year 1990 and determine target levels for 2020;
3. On or before January 1, 2010, adopt regulations to implement the early action GHG emission reduction measures;
4. On or before January 1, 2011, adopt quantifiable, verifiable, and enforceable emission reduction measures by regulation that will achieve the statewide GHG emissions limit by 2020, to become operative on January 1, 2012, at the latest. The emission reduction measures may include direct emission reduction measures, alternative compliance mechanisms, and potential monetary and non-monetary incentives that reduce GHG emissions from any sources or categories of sources that the CARB finds necessary to achieve the statewide GHG emissions limit; and
5. Monitor compliance with and enforce any emission reduction measure adopted pursuant to AB 32.

Regarding the first two points above, the CARB has already made available a list of discrete early action GHG emission reduction measures. The CARB has also published a staff report titled *California 1990 GHG Emissions Level and 2020 Emissions Limit* (CARB, 2007a) that determined the statewide levels of GHG emissions in 1990. The CARB identified 427 million MT CO_2e as the total statewide aggregated GHG 1990 emissions level and 2020 emissions limit. Additionally, in December 2008, the CARB adopted the Climate Change Scoping Plan, which outlines the state's strategy to achieve the 2020 GHG limit (CARB 2008a). This Scoping Plan proposes a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify energy sources, save energy, create new jobs, and enhance public health. The plan emphasizes a cap-and-trade program, but also includes the discrete early actions.

Senate Bill 97. Senate Bill (SB) 97, enacted in 2007, amends the CEQA statute to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. It directed the California Office of Planning and Research (OPR) to develop draft CEQA Guidelines for the mitigation of GHG emissions or the effects of GHG emissions. On December 30, 2009, the Natural Resources Agency adopted CEQA Guidelines amendments, which provide regulatory guidance with respect to the analysis and mitigation of the potential effects of GHG emissions. The amendments to the CEQA

Guidelines concerning the effects and mitigation of GHGs became effective on March 18, 2010.

Executive Order S-13-08. On November 14, 2008, Governor Schwarzenegger issued Executive Order S-13-08, the Climate Adaptation and Sea Level Rise Planning Directive, which provides direction for how the state should plan for future climate impacts. Executive Order S-13-08 calls for the implementation of four key actions to reduce the vulnerability of California to climate change:

1. Initiate California's first statewide CAS that will assess the state's expected climate change impacts, identify where California is most vulnerable and recommend climate adaptation policies;
2. Request that the National Academy of Sciences establish an expert panel to report on sea level rise impacts in California in order to inform state planning and development efforts;
3. Issue interim guidance to state agencies for how to plan for sea level rise in designated coastal and floodplain areas for new and existing projects; and
4. Initiate studies on critical infrastructure projects and land-use policies vulnerable to sea level rise.

The 2009 CAS report summarizes the best known science on climate change impacts in the state to assess vulnerability and outlines possible solutions that can be implemented within and across state agencies to promote resiliency. This is the first step in an ongoing, evolving process to reduce California's vulnerability to climate impacts (California Natural Resources Agency, 2009).

California Code of Regulations Title 24, Part 6. Although it was not originally intended to reduce GHG emissions, California Code of Regulations (CCR) Title 24, Part 6: *California's Energy Efficiency Standards for Residential and Nonresidential Buildings* was first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

Senate Bill 375. SB 375, approved by the governor on September 30, 2008, requires metropolitan planning organizations (MPOs) to include sustainable communities strategies (SCS), as defined, in their regional transportation plans (RTPs) for the purpose of reducing GHG emissions, aligns planning for transportation and housing, and creates specified incentives for the implementation of the strategies. Specifically, this bill makes findings and declarations concerning the need to make significant changes in land use and transportation policy in order to meet the GHG reduction goals established by AB 32. SB 375 also requires ARB to develop regional GHG emission reduction targets to be achieved from the automobile and light truck sectors for 2020 and 2035 by September 30, 2010. The 18 MPOs in California will prepare a SCS to reduce the amount of vehicle miles traveled in their respective regions and demonstrate the ability for the region to attain ARB's targets. Within eight years cities will be required to update housing plans required by the state.

The ARB Regional Targets Advisory Committee (RTAC), which was appointed in January 2009 to help address the requirements of SB 375, was tasked with recommending a method by which each major region of the state could reduce GHG emissions through more sustainable land use and transportation planning. After approximately 13 public meetings in Sacramento, the RTAC, in its September 29, 2009 report, recommended that regional targets be expressed as a percent per capita GHG emission reduction from a 2005 base year. This differs from the 1990 base year established in AB 32 due to a lack of reliable regional transportation and land use data from 1990 (according to the RTAC). The RTAC also recommended CARB use an interactive process with the regional MPOs, such as the San Diego Association of Governments (SANDAG), to set a single statewide uniform target that could be adjusted up or down to respond to regional differences. The targets may be expressed in gross MT, MT per capita, MT per household or in any other metric deemed appropriate by CARB, and were to be presented to the CARB Board by September 2010.

SANDAG is currently preparing its SCS as an element of the 2050 Regional Transportation Plan. A framework for the SCS has been developed and was presented to the public in October 2010.

Green Port Policy and Green Port Program

In 2008, the Board of Port Commissioners adopted the Green Port Policy (BPC Policy No. 736) to establish a policy for the Integration of overarching environmental sustainability principles and initiatives to guide business decisions, development and operations within the San Diego Unified Port District's (District) jurisdiction. The District developed a Green Port Program in order to support the goals of the Green Port Policy. The ultimate goal of the program is to achieve long-term environmental, societal and economic benefits through resource conservation, waste reduction and pollution prevention. The Green Port Program unifies the District's environmental sustainability goals in six key areas: energy, waste management, sustainable development, water, air, and sustainable business practices. As part of the program, the District sets measurable goals and evaluates progress in each area on an annual basis. The program continues the District's existing environmental efforts and expands these efforts through new programs and initiatives. The Green Port Policy and Green Port Program apply only to operations of the District and District buildings.

5.10.7.3 Methodology

The following section addresses potential impacts to global climate change which may result from GHG emissions that could result due to this project Alternative. Due to the nature of assessment of GHG emissions and the effects of climate change, impacts from individual projects are generally of insufficient magnitude by themselves to have a significant impact on global climate change or result in a substantial contribution to the global GHG inventory. Accordingly, discussion of this Alternative's GHG emissions and its impact on global climate are addressed in terms of the Alternative's contributions to a cumulative impact on the global climate.

Emissions of GHGs from construction are based on the construction assumptions detailed in Section 5.10.3, Air Quality. CO_2 emissions from the CDF construction activities are assessed using the Urban Emissions Model (URBEMIS 2007, version 9.2.4) distributed by the CARB, with the exception of emissions from the tug boats required for barge transport. Tug boat emissions factors were provided by the EPA in *Current Methodologies in Preparing Mobile Source Port-Related Emissions Inventories - Final Report* (EPA, 2009). The URBEMIS model does not calculate N_2O or methane emissions. The ratio of N_2O and methane emissions to CO_2 emissions in tug boat diesel exhaust (EPA, 2009) were used to estimate N_2O and methane emissions from the remaining construction equipment. The analysis assessed total GHG emissions from each individual phase of construction, including site preparation, jetty construction, sediment transportation and placement, and containment cap installation. A complete listing of the assumptions used in the model and model output is provided in the URBEMIS output worksheet and the Tug Boat GHG Emissions During Convair Lagoon Alternative Construction worksheet, which are included in Appendix N of this EIR. GHG emissions from construction activities at the Shipyard Sediment Site were quantified by LSA Associates, Inc. in the *Air Quality Analysis, Shipyard Sediment Project, California Regional Water Quality Control Board, San Diego Region* (2011), which is included as Appendix G to this EIR. The assumptions and calculated emissions for the construction phases associated with the Shipyard Sediment Site Project are incorporated into this analysis by reference.

GHG emissions from operation of the Alternative are discussed qualitatively due to the lack of operational sources of GHG emissions.

5.10.7.4 Thresholds of Significance

The 2010 amendments to the CEQA Guidelines amended Appendix G to provide the following questions for evaluating whether a project would have a significant impact on the environment as a result of GHG emissions. Section VII of Appendix G inquires whether a project would a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions.

Threshold 5.10.7.1: Direct and Indirect Generation of GHGs and Consistency with Applicable Plans Adopted for Reducing GHGs. Currently, neither the CEQA statutes, OPR guidelines, nor the CEQA Guidelines prescribe specific quantitative thresholds of significance or a particular methodology for performing an impact analysis of GHG emissions. Significance criteria are left to the judgment and discretion of the Lead Agency. The method used to determine the significance of the Proposed Project's GHG emissions is also utilized for this analysis of the Convair Lagoon Alternative. Refer to the *Air Quality Analysis, Shipyard Sediment Project, California Regional Water Quality Control Board, San Diego Region* (LSA, 2011) for detailed information regarding selection of this significance threshold, which is described below.

As discussed in the GHG impact analysis for the Proposed Project, the CARB has published draft preliminary guidance to agencies on how to establish interim significance thresholds for analyzing GHG emissions. The proposed draft Guidance states that some small residential and commercial projects, emitting 1,600 metric tons of CO_2e per year or less, would clearly not interfere with achieving the state's emission reduction objectives in AB 32 (and EO S-03-05). The Guidance does not state or imply that projects emitting more than 1,600 metric tons of CO2e per year will necessarily result in a significant impact. Additionally, the Guidance does not establish a quantifiable threshold for construction emissions.

The County of San Diego has published the County of San Diego Interim Approach to Addressing Climate Change in CEQA Documents (DPLU, 2010a), which states that a project would result in potentially significant GHG emissions impacts if it would result in a net increase of more than 900 MT CO_2e emissions annually over baseline conditions. GHG emissions that would be below the County's threshold would also be consistent with the CARB's guidance for screening potential GHG impacts described above. According to the County's guidelines, construction emissions should be amortized over the lifetime of a project and added to annual operational emissions. The project lifetime is assumed to be 30 years. Consistent with the thresholds of significance for the Proposed Project, the Convair Lagoon Alternative would result in a significant impact if it would contribute to a long-term ongoing increase in GHG emissions. For the purposes of this analysis, a long-term ongoing increase in GHG emissions is considered to be an annual amortized increase in GHG emission that exceeds 900 MT of CO_2e.

Threshold 5.10.7.2: Hazards Related to Climate Change. The CEQA Guidelines do not include a guideline for addressing the potential adverse effects of climate change on a proposed project. For the purposes of this analysis, the Alternative would result in a significant impact if it would result in increased exposure to one or more of the potential adverse effects of global warming identified by the San Diego Foundation's Regional Focus 2050 Working Paper and Technical Assessment.

5.10.7.5 Impacts and Mitigation Measures

Less Than Significant Impacts

Threshold 5.10.7.1: Direct and Indirect Generation of GHGs and Consistency with Applicable Plans Adopted for Reducing GHGs. An inventory of the GHG emissions (CO_2, methane, and nitrous oxides) that would be emitted by construction activities associated with the Alternative is presented below. The emissions of the individual gases were estimated and then converted to their CO_2e using the individually determined GWP of each gas. The analysis methodology used for the inventory assumes a "business as usual" scenario for the Alternative. That is, the analysis does not take into account any GHG emissions reducing features that may be implemented during construction. A discussion of operational emissions is also presented.

Construction Emissions. Construction of the CDF, sediment transport, as well as the construction activities associated with the dredging and related activities at the Shipyard Sediment Site would result in temporary emissions of GHGs from the operation of construction equipment, truck trips for the import and export of material, worker vehicle trips, and construction supply vendor vehicles. The equipment associated with this Alternative is discussed in detail Section 5.10.3, Air Quality, and includes heavy construction equipment for construction and dredging, and tugboats for barge towing. GHG emissions for construction from all equipment other than tugboats are based on the assumptions listed for the worst-case daily construction scenario described in Section 5.10.3, Air Quality. Tugboat emissions are based on the report *Current Methodologies in Preparing Mobile Source Port-Related Emissions Inventories - Final Report* (EPA, 2009). While the impact analysis for criteria pollutants is based on the maximum daily emissions from tugboat operation, the GHG inventory is based on the total hours of tugboat operation that would be required. As discussed in Section 5.10.1, Convair Lagoon Alternative Description, approximately 98 barge trips would be required for sediment transport and the one-way travel distance is approximately five miles. The speed limit in the bay in lagoon areas and anchorage areas is 5 miles per hour (mph). Outside of the 5 mph speed limit zones, the bay is not regulated by a speed limit and is to be navigated at a safe and prudent speed (District, 2011a). Therefore, to determine the worst-case scenario, it is assumed that tugboats would be travelling at 5 mph for a round trip travel time of two hours. Additionally, tugboats would be idling during barge loading at the Shipyard Sediment Site and unloading at the Convair Lagoon Alternative site. It is assumed that loading and unloading would take four hours each (Design Rate Simulations, 2011). A complete list of tugboat emissions assumptions is included in Appendix N. Total GHG emissions from the Convair Lagoon Alternative site construction activities are considered the worst-case annual GHG emissions for this Alternative's construction phases.

Under the Shipyard Sediment Site Project, construction activities from the Proposed Project would result in up to 7,750 MT CO_2e per year (LSA, 2011), based on the worst-case maximum GHG emissions. Construction of the Convair Lagoon Alternative involves activities associated with the Proposed Project (e.g., site preparation, dredging, dredge materials transport to a landside location for drying and operation of the landside drying area for 15 percent of the dredge material) along with the Convair Lagoon Alternative construction activities, transport of dredge material to the Convair Lagoon Alternative site, placement of the dredge material and installation of the sand and asphalt cap. Construction activities at the Shipyard Sediment Site would contribute 2,612 MT CO_2e per year to Convair Lagoon Alternative GHG emissions. Construction activities at the Shipyard Sediment Site may take up to 18 months; therefore, a total of 3,918 MT CO_2e would potentially be generated by construction activities at the Shipyard Sediment Site. Construction of the Convair Lagoon CDF, including transport of dredged sediment, placement of dredged sediment, and cap construction would contribute approximately a total of 4,175 MT over the 15 month construction period, resulting in total construction emissions of 8,093 MT CO_2e (Table 5-32). To determine the contribution of construction emissions to long-term ongoing annual GHG emissions, GHG emissions from construction are amortized over the lifetime of the CDF, which is assumed to be 30 years. Construction associated with the Alternative would contribute approximately 270 MT CO_2e to the long-term ongoing annual emissions inventory. Therefore, long-term annual GHG emissions from construction under the Convair Lagoon Alternative would not exceed the thresholds established by the County of San Diego or CARB.

Table 5-32: Estimated Annual GHG Emissions from Alternative Construction

Emission Source	GHG Emissions (Metric Tons CO_2e)
Demolition of Existing Facilities	109
Excavation and Construction of Containment Barrier	788
Extension of Storm Drains	118
Sediment Transport and Placement	2,857
Construction of Sand Cap	303
Shipyard Sediment Site Construction	3,918
Total Construction Emissions	**8,093**
Amortized Construction Emissions	**270**

Source: URBEMIS 2007, EPA 2009
Note: Amortization is based on a 30 year lifetime.

Operational Emissions. Upon completion of construction, the site would consist of undeveloped land with an elevation approximately 10 feet above Mean Lower Low Water (MLLW). The Convair Lagoon Alternative does not include the construction or development of any buildings or structures and no permanent dewatering would be required. Therefore, no stationary sources are included in this Alternative that would generate GHG emissions. Occasional vehicle trips may be required for monitoring, maintenance, and, repair of the cap. However, due to the limited occurrence of these trips, annual emissions from these vehicle trips would be negligible. The operation of this Alternative would not contribute to an ongoing increase in GHG emissions and this impact would be less than significant.

Similar to the Proposed Project, the Convair Lagoon Alternative would result in short-term emissions associated with the use of construction equipment, but would not contribute long-term operational emissions because there are no on-site stationary sources or operational vehicular trips. Therefore, the amortized construction emissions in Table 5-32 represent the total long-term annual GHG contribution of the Convair Lagoon Alternative. Annual GHG emissions would be approximately 270 MT CO_2e and would not exceed the screening level thresholds established by the County of San Diego or CARB. Similar to the Proposed Project, this impact is less than significant.

Threshold 5.10.7.2: Hazards Related to Climate Change. The San Diego Foundation's Regional Focus 2050 Working Paper and Technical Assessment projected potential adverse effects on the San Diego region related to climate, energy need, public health, wildfires, water supply, sea level, and ecosystems. The following analysis discusses potential hazards related to climate change that the Convair Lagoon and surrounding area may be subject to in the future.

Warming across San Diego County is projected to increase 1.5 °F to 4.5 °F between the years 2000 and 2050. Warmer temperatures would increase the peak demand for electricity and could result in blackouts and power outages. However, the proposed Alternative does not include any structures that would be used for human occupation. Additionally, the CDF does not include any features that would require electricity. Therefore, the proposed Alternative would not result in an increased exposure of people to higher temperatures or result in an increased number of blackouts as result of increased peak energy demand.

Regarding public health, increases in ozone air pollution levels as a result of climate change could exacerbate asthma and other respiratory and cardiovascular diseases. However, as discussed in Section 5.10.3, Air Quality, the proposed Alternative would not result in operational sources of ozone precursors. Therefore, the proposed Alternative would not significantly increase exposure of people to health risks from ozone. Fire-related injuries and death are likely to increase as intense wildfires occur more frequently, however, exposure to fire risk from this Alternative would not increase because it does not propose any structures for occupancy and is not located adjacent to wildland. Additionally, cases of mosquito-related diseases could increase, and algal blooms with toxic bacteria could occur more frequently along the coast. However, this Alternative does not include any structures for occupancy or any other facilities, such as recreational areas, for public use. Therefore, the proposed Alternative would not result in an increased exposure to public health concerns.

It is estimated that San Diego County could face an 18 percent shortfall in water supply by 2050. However, the proposed Alternative would not result in an increase in demand for potable water, therefore it would not impact water supply.

Rising sea levels have the potential to result in high tide flooding, cause even greater coastal erosion and scouring, and put pipelines at risk for saltwater intrusion. The mean sea level rise values range from approximately 12 to 18 inches by the year 2050. Following construction, the height of the CDF would be approximately 10 feet MLLW, that is, 10 feet above the average lowest daily water height. As discussed in Section 5.10.4, Biological Resources, land that is above 7.8 feet MLLW is generally above the area that is inundated by tidal action. The CDF would be four feet above this height. Therefore, even the highest predicted level of sea level rise, 18 inches, would not overtop the CDF. The containment barrier is designed to be submerged in order to separate the sediment from the bay. A change in sea level would not affect the function of the containment barrier because of its design and the approximately 2.7 feet difference between the highest predicted level of sea level rise and the top of the containment barrier. In addition, the CDF does not contain any structures; therefore, no flooding impacts to occupied structures would occur. This Alternative also includes extending two existing storm drains which currently experience saltwater intrusion and therefore this would continue with the increase in sea level elevation. Therefore, the proposed project would not result in an increased exposure to risks from rising sea levels.

Climate change will also add to the pressures on the variety of habitats and species in the county by making suitable habitat less available. As discussed in Section 5.10.4, Biological Resources, the proposed Alternative would mitigate all of its potentially significant impacts to biological resources to a less than significant level. Implementation of mitigation measures 5.10.4.3 and 5.10.4.4 would replace habitat disturbed by this Alternative. Habitat would be provided at a 1:1 or higher ratio depending on the habitat. Therefore, for most habitats additional habitat would be provided compared to existing conditions. As a result, the proposed Alternative would not result in the increased exposure of biological resources impacted by this alternative to risks from climate change.

Mitigation Measures

No significant impacts related to GHG emissions or climate change hazards would occur from implementation of the Convair Lagoon Alternative. Therefore, no mitigation measures are required.

Cumulative Impacts

As discussed above, the County of San Diego has determined that a project would result in potentially significant GHG impacts if it would result in a net increase of more than 900 MT CO_2e emissions annually over baseline conditions. The County determined this screening level based on the potential for individual projects to contribute to regional cumulative GHG emissions. Therefore, a project that would generate fewer than 900 MT of CO_2e would not result in a direct or cumulative impact related to GHG emissions. As discussed in Section 5.10.7.5.1, the Convair Lagoon Alternative would result in annual GHG emissions of approximately 270 MT CO_2e. The proposed Alternative would therefore not result in a cumulatively considerable contribution to cumulative GHG emissions.

Level of Significance After Mitigation

No significant impacts related to GHG emissions or climate change hazards would occur from implementation of the Convair Lagoon Alternative. Without mitigation, all impacts are less than significant.

Significant Unavoidable Adverse Impacts

No significant and unavoidable impacts related to GHGs would occur from implementation of the Convair Lagoon Alternative.

5.10.8 Hazards and Hazardous Materials

This section describes the existing setting regarding hazards and hazardous materials and potential effects on the alternative site and surrounding areas that would occur from implementation of the Convair Lagoon Alternative. Hazards include topics such as airport operations, emergency response and evacuation plans, while hazardous materials pertain to hazardous chemicals or substances. Hazardous materials information in this section is based on the *Hazards and Hazardous Materials Technical Report (HHMTR) for the Shipyard Sediment Site Alternative Analysis Convair Lagoon,* prepared by Ninyo and Moore in May, 2011. The HHMTR report is included as Appendix M in this EIR.

5.10.8.1 Existing Environmental Setting

Existing Hazardous Materials Contamination

Hazardous materials typically require special handling, reuse, and disposal because of their potential to harm human health and the environment. The California Health and Safety Code (H&SC) defines a hazardous material as:

> "Any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment." (H&SC, section 25501)

As part of the HHMTR, a search of the Department of Toxic Substance Control (DTSC) Envirostor Database, the State Water Resources Control Board (State Water Board) GeoTracker Database and the Cortese List was performed to identify on site or adjacent properties that have been previously documented as having experienced significant unauthorized releases of hazardous substances.

The DTSC Envirostor Database list includes the following site types: Federal Superfund Sites; State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. The GeoTracker database is a geographic information system that provides online access to hazardous material contamination data related to underground fuel tanks, fuel pipelines and public drinking water supplies. Cortese List data resources include the above mentioned databases, in addition to a list of solid waste disposal sites identified by State Water Board with waste constituents above hazardous waste levels outside the waste management unit; a list of "active" Cease and Desist Orders (CDO) and Cleanup and Abatement Orders (CAO) from State Water Board; and a list of hazardous waste facilities subject to corrective action pursuant to section 25187.5 of the H&SC, identified by DTSC.

In total, five sites, including the Convair Lagoon and four adjacent properties, were identified in the records search as having existing or past hazardous materials contamination. These sites are described below.

Convair Lagoon. Convair Lagoon, which is coincident with the Convair Lagoon Alternative site, is subject to California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) Waste Discharge Requirement (WDR) Order No. 98-21 and has two active CAOs: CAO 86-92 and CAO R9-2004-0258. A brief summary of these documents is provided below.

5. **CAO 86-92 and Amendments:** CAO 86-92 was issued on October 17, 1986, to Teledyne Ryan Aeronautical (TDY) for the discharge of Polychlorinated biphenyl (PCBs), metals, and volatile organic compounds (VOCs) into the storm water conveyance system that discharged into Convair Lagoon. Sediments in the lagoon from this discharge were found to contain PCBs at concentrations ranging from 1 to 1,800 milligrams per kilogram (mg/kg) as dry weight from the surface to depths of 10 feet. These concentrations were considered by the San Diego Water Board to require clean- up and abatement to be protective of the waters of the state. Between 1986 and 1998, PCB wastes were removed from the storm water conveyance system at the TDY facility and a sand cap was constructed to isolate the contaminated sediments from the environment (identified in the CAO as sediments with PCBs at concentrations at or exceeding 4.6 mg/kg as dry weight). The approximately 7-acre sand cap covered areas within the Convair Lagoon site where sediments contained PCBs at concentrations exceeding 4.6 mg/kg as dry weight. As part of the capping project, approximately 1,400 square feet of intertidal land was converted to upland.
6. **San Diego Water Board WDR 98-21:** Following the construction of the sand cap under CAO 86-92, the San Diego Water Board issued WDR 98-21, Closure and Post-Closure maintenance of the Convair Lagoon Sand Cap, which regulates the sand cap and associated monitoring, maintenance, and, repairs. The WDR states that the action level to trigger repair and or investigation of the cap or cleaning of the storm water conveyance system is 4.6 mg/kg dry weight in the sediments. WDR 98-21 also provides a list of water quality objectives that apply to the water within Convair

Lagoon. Some of objectives provided are for dissolved oxygen, pH, oil and grease, suspended sediment load/discharge rate, turbidity, and toxicity.

7. **CAO R9-2004-0258 and Amendments:** CAO R9-2004-0258 states that PCBs, VOCs, and heavy metals from the former manufacturing activities at the TDY facility have, “caused and threatens to cause conditions of pollution, contamination, and nuisance by exceeding applicable water quality objectives for toxic pollutants to San Diego Bay.” The order also states that PCB concentrations have continued to be found in the storm water conveyance system at the TDY facility even after clean out and replacement of portions of the system. In addition, PCBs discharged from the storm water conveyance system are being deposited on the surface of the sand cap at Convair Lagoon. PCBs have been detected on the surface of the sand cap at concentrations ranging from 1.77 to 20.44 mg/kg, which exceeds the clean-up level of 4.6 mg/kg dry weight established in CAO 86-92. Releases of waste to soil and groundwater are also noted from the former land-side aerospace operations, which include impacts from chlorinated solvents and hexavalent chromium. The CAO states that these discharges may reach San Diego Bay through the migration of groundwater into the storm water conveyance system or directly into the bay.

    a. CAO R9-2004-0258 required a site investigation and characterization report be prepared. This report was completed by Geosyntec on December 19, 2005 and included an evaluation of soil, groundwater, and sediment impacts. A remedial investigation/ feasibility study (RI/FS) was also required and was submitted in March 2007. The RI/FS selected in-situ bioremediation to address chlorinated solvents in groundwater, in-situ reduction to address hexavalent chromium in groundwater, and excavation and off-site disposal of impacted soil and concrete. Details of the proposed remedial actions are described in a Remedial Action Plan.

    b. In accordance with CAO R9-2004-0258, groundwater monitoring is currently performed on a semi-annual basis at the TDY facility and at the Convair Lagoon site. Eight monitoring wells (MWCL-1 through MWCL-8R) have been installed on the landside portion of the Convair Lagoon site and are used to monitor potential impacts to San Diego Bay. The most recent groundwater monitoring report is from July 2010, which states that low levels of VOCs and trace levels of PCBs were detected in the northwestern portion of the site. However, the monitoring report indicated these levels may have been a result of cross-contamination in the laboratory.

    c. CAO R9-2004-0258 states that there are three areas of concern with regard to the transport of wastes from the TDY facility to Convair Lagoon: 1) Convair Lagoon shoreline groundwater, 2) sediment in the storm water conveyance system that empties into Convair Lagoon/San Diego Bay, and 3) VOC-impacted groundwater seeping into the 54-inch and 60-inch storm drains. Although this CAO states that sediment transport to the lagoon is a concern, the storm drain inlets and laterals on the TDY facility were capped with concrete; therefore, no additional input of sediment to the storm water conveyance system from the TDY facility is known to be occurring. However, there is the potential for PCB impacted sediments to be transported to Convair Lagoon from sites up gradient of the TDY facility, which continue to discharge into the storm water conveyance system. Specific sites up gradient of TDY have not been identified as sources of PCBs in the storm water conveyance system. There is a potential risk to human health associated with the incidental ingestion of or contact with the sediments in the lagoon. The CAO requires that soil and groundwater contamination at the TDY facility be remediated to the identified clean up levels, visible sediment should be removed from within the 60-inch storm drain and associated energy dissipater, and a remedial action plan be submitted to detail how the cleanup levels will be achieved. The San Diego Water Board is responsible for ensuring that the remediation is performed in accordance with the requirements of this CAO.

d. As required by the San Diego Water Board in CAO R9-2004-0258, issued for the TDY facility, numerous investigations have been performed to evaluate impacted soil and groundwater, potential remedial alternatives, and potential sources of PCBs in the storm water conveyance system. The potential sources of PCBs in the storm water conveyance system have been identified as on-site and off-site soil, groundwater, sediment, building materials, and rainfall.

e. A Remedial Investigation Feasibility Study (RI/FS) was prepared by the San Diego Water Board, which states that the recommended remedial action for addressing PCB impacted sediments in the 60-inch storm water conveyance system is to clean out sediments and remove the storm water conveyance system laterals on the site after the existing TDY site buildings (a potential source of PCBs) have been removed. The RI/FS also states that the recommended remedial action for PCB impacts to groundwater at the TDY site is to continue groundwater monitoring under the supervision of the San Diego Water Board to confirm that PCB impacted groundwater is not migrating into Convair Lagoon at levels that exceed existing regulatory limits. The San Diego Water Board will be responsible for ensuring the remediation of the TDY facility is performed in accordance with the requirements of the applicable CAOs.

U.O.P. Inc., Fluid Systems Division. The U.O.P. Inc facility is located at 2980 North Harbor Drive, directly north of the Convair Lagoon Alternative site. This facility is listed on the Envirostor database as a Corrective Action. A Corrective Action property is defined as a property that treated, stored, disposed, or transferred hazardous waste at which investigation or cleanup activities occurred that were either permitted or eligible for a permit. The status of the facility is listed as inactive, needs evaluation.

General Dynamics Convair. The General Dynamics Convair Site is located at 2980 North Harbor Drive, directly north of the Convair Lagoon Alternative site. This facility is listed on the GeoTracker database as having a closed leaking underground storage tank case. The case was reported as having impacted soil only with aviation fuel and was closed in 1996.

U.S. Coast Guard Facility. The U.S. Coast Guard Facility is located at 2710 North Harbor Drive, directly east of the Convair Lagoon Alternative site. The Coast Guard Facility was listed on the Envirostor database as a Military Evaluation facility and on the GeoTracker database as a Cleanup Program Site and as having a closed Leaking Underground Storage Tank (LUST) case. The Envirostor listing indicates that the facility is listed as a Formerly Used Defense Site (FUDS) that is inactive and needs evaluation. However, the facility is currently operating as a military facility and is not listed on the U.S. Army Corps of Engineers (USACE) FUDS database as a site where the USACE has performed or is planning to perform work. Therefore, it is possible that this listing is an error. A phone call was placed to the USACE to clarify this listing, but was not returned as of the date of this report. The GeoTracker Cleanup Program site listing indicates that the case was closed as of 1987; however, no additional information was provided. The GeoTracker LUST case listing indicates that the case was a release of aviation fuel to groundwater that was closed in 2001; however, no additional information was provided.

Teledyne Ryan Aeronautical. The TDY facility is located at 2710 North Harbor Drive, directly north of the Convair Lagoon Alternative site. This facility is listed on the GeoTracker database as a Cleanup Program Site and has four closed LUST cases. Three LUST cases are listed as having impacted soil only with diesel (2 cases) or gasoline (1 case). The cases are listed as closed in 1992, 1994, and 2000. One case is listed has having impacted groundwater with a release of diesel fuel; however, the case was closed in 2004 and no further action was required. The Cleanup Program Site listing indicates that the TDY facility is currently undergoing remediation. This listing includes all work performed under San Diego Water Board WDR 98-21, CAO 86-92 and CAO R9-2004-0258, as discussed above under Convair Lagoon. The wastes discharged at the former facility include PCBs, VOCs, semi-volatile organic compounds (SVOCs), Polycyclic aromatic hydrocarbons (PAHs), metals, and total petroleum hydrocarbons.

Hazardous Waste Transportation

In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by the DTSC. The DTSC maintains a list of active registered hazardous waste transporters throughout the state. The process of transporting hazardous waste often involves transfer facilities. A transfer facility is any facility that is not an on-site facility that is related to the transportation of waste. These facilities include but are not limited to, loading docks, parking areas, storage areas, and other similar areas. Although not all transfer facilities hold hazardous waste, any operator of a facility that accepts hazardous waste for storage, repackaging or bulking must obtain formal authorization for those activities through the hazardous waste permit process. Hazardous waste transporters are exempt from storage facility permit requirements so long as they observe the limits on storage time and handling.

Hazardous Materials Disposal

Through the Resource Conservation and Recovery Act (RCRA), Congress directed the EPA to create regulations that manage hazardous waste from "the cradle to the grave." Under this mandate, the EPA has developed strict requirements for all aspects of hazardous waste management including the recycling, treatment, storage, and disposal of hazardous waste. Facilities that provide recycling, treatment, storage, and disposal of hazardous waste are referred to as Treatment, Storage and Disposal Facilities (TSDF). Regulations pertaining to TSDFs are designed to prevent the release of hazardous materials into the environment and are more stringent than those that apply to generators or transporters.

Hazardous Materials Release Threats

When unexpectedly released into the environment, hazardous materials may create a significant hazard to the public or environment. Hazardous materials are commonly stored and used by a variety of businesses and could be released into the environment through improper handling or accident conditions. However, businesses that store and use hazardous materials are required to create Hazardous Materials Business Plans (HMBP) and Risk Management Plans. HMBPs establish a plan to minimize hazards to human health and the environment from fires, explosions, or an unplanned release of hazardous substances into air, soil, or surface water. Risk Management Plans include a hazard assessment program, an accidental release prevention program, and an emergency response plan.

County of San Diego Site Assessment and Mitigation (SAM) Program. The San Diego County SAM Program, within the Land and Water Quality Division of the Department of Environmental Health (DEH), has a primary purpose to protect human health, water resources, and the environment within San Diego County by providing oversight of assessments and cleanups in accordance with the California H&SC and the California Code of Regulations (CCR). The SAM's Voluntary Assistance Program also provides staff consultation, project oversight, and technical or environmental report evaluation and concurrence (when appropriate) on projects pertaining to properties contaminated with hazardous substances. The DEH SAM Program maintains the SAM list of contaminated sites that have previously or are currently undergoing environmental investigations and/or remedial actions.

The SAM Program covers all of San Diego County and includes remediation sites of all sizes. The SAM case listing is revised and updated regularly and the number of sites on the list is continually changing, but may contain upwards of 5,000 cases at one time. There is some overlap with the information in other regulatory databases; however, the list also contains sites that often are not covered by some of the larger regulatory databases.

Airport Hazards

The areas of concern when addressing airport hazards are over-flight safety, airspace protection, flight patterns and land use compatibility. Dealing with these concerns contributes to the overall safety of passengers, pilots and crews on flights, in addition to the safety of people on the ground. Hazards associated with airports can have serious human safety and quality of life impacts.

Public Airport Hazard Prevention. Airport Land Use Compatibility Plans (ALUCPs) are plans that guide property owners and local jurisdictions in determining what types of proposed new land uses are appropriate around airports. They are intended to protect the safety of people, property and aircraft on the ground and in the air in the vicinity of the airport. They also protect airports from encroachment by new incompatible land uses that could restrict their operations. ALUCPs are based on a defined area around an airport known as the Airport Influence Area. Airport Influence Areas are established by factors including airport size, operations, configuration, as well as the safety, airspace protection, noise, and overflight impacts on the land surrounding an airport. ALUCPs do not affect existing land uses.

Military Airport Hazard Prevention. Guidelines set forth by the Department of Defense (DOD) as part of its Air Installation Compatible Use Zone (AICUZ) Program address land use compatibility and safety policies for military airport runways. The AICUZ was initiated in the 1970s to recommend land uses that may be compatible with noise levels, accident potential and flight clearance requirements associated with military airfield operations. DOD prepared individual AICUZ plans for all major military airports. The objective of this program is to encourage compatible uses of public and private lands in the vicinity of military airfields through the local communities' comprehensive planning process. The Accident Potential Zone (APZ) is unique to military airfields, and is generally applied to all U.S. Navy and Marine Corps airfields within the United States designation of APZs is a component of the AICUZ. These zones describe the probable impact area if an accident were to occur, based on historical accident data.

5.10.8.2 Regulatory Setting

Federal

Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984. Federal hazardous waste laws are generally promulgated under the RCRA. These laws provide for the "cradle to grave" regulation of hazardous wastes. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed. DTSC is responsible for implementing the RCRA program as well as California's own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law.

Comprehensive Environmental Response, Compensation, and Liability Act and the Superfund Amendments and Reauthorization Act of 1986. Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, on December 11, 1980. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified. The Superfund Amendments and Reauthorization Act (SARA) amended the CERCLA on October 17, 1986. SARA stressed the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites; required Superfund actions to consider the standards and requirements found in other state and federal environmental laws and regulations; provided new enforcement authorities and settlement tools; increased state involvement in every phase of the Superfund program; increased the focus on human health problems posed by hazardous waste sites; encouraged greater citizen participation in making decisions on how sites should be cleaned up; and increased the size of the trust fund to $8.5 billion.

Chemical Accident Prevention Provisions. When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. These rules, which built upon existing industry codes and standards, require companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program.

Emergency Planning Community Right-to-Know Act. The Emergency Planning Community Right-to-Know Act (EPCRA), also known as SARA Title III, was enacted in October 1986. This law requires any infrastructure at the state and local levels to plan for chemical emergencies. Reported information is then made publicly available so that interested parties may become informed about potentially dangerous chemicals in their community. EPCRA sections 301 through 312 are administered by EPA's Office of Emergency Management. EPA's Office of Information Analysis and Access implements the EPCRA section 313 program. In California, SARA Title III is implemented through the California Accidental Release Prevention Program (CalARP).

Hazardous Materials Transportation Act. The U.S. Department of Transportation regulates hazardous materials transportation under Title 49 of the Code of Federal Regulation (CFR). State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California

Highway Patrol and the California Department of Transportation. These agencies also govern permitting for hazardous materials transportation. Title 49 CFR reflects laws passed by Congress as of January 2, 2006.

EPA Region 9, Preliminary Remediation Goals. Region 9 is the Pacific Southwest Division of the EPA, which includes Arizona, California, Hawaii, Nevada, Pacific Islands, and over 140 Tribal Nations. Preliminary Remediation Goals (PRGs) are tools for evaluating and cleaning up contaminated sites. PRGs for the Superfund/RCRA programs are risk-based concentrations, derived from standardized equations combining exposure information assumptions with EPA toxicity data. They are considered to be protective for humans, including sensitive groups, over a lifetime. However, PRGs are not always applicable to a particular site and do not address non-human health issues such as ecological impacts. Region 9's PRGs are viewed as agency guidelines, not legally enforceable standards.

International Fire Code. The International Fire Code (IFC), created by the International Code Council, is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The IFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The IFC and the International Building Code (IBC) use a hazard classification system to determine what protective measures are required to protect fire and life safety. These measures may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the IFC employs a permit system based on hazard classification. The IFC is updated every three years.

Federal Aviation Administration Functions. The Federal Aviation Administration (FAA) has primary responsibility for the safety of civil aviation. The FAA's major functions regarding hazards include the following: 1) developing and operating a common system of air traffic control and navigation for both civil and military aircraft, 2) developing and implementing programs to control aircraft noise and other environmental effects of civil aviation, 3) regulating United States commercial airspace transportation, and 4) conducting reviews to determine that the safety of persons and property on the ground are protected.

U.S. Department of Defense Air Installations Compatible Use Zone Program. Safety compatibility criteria for military air bases are set forth through the AICUZ Program administered by the DOD. This program applies to military air installations located within the United States, its territories, trusts, and possessions. The AICUZ Program has the following four purposes: 1) to set forth DOD policy on achieving compatible use of public and private lands in the vicinity of military airfields, 2) to define height and land use compatibility restrictions, 3) to define procedures by which AICUZ may be defined, and 4) to provide policy on the extent of Government interest in real property within these zones that may be retained or acquired to protect the operational capability of active military airfields.

State

Government Code Section 65962.5 (a), Cortese List. The Hazardous Waste and Substance Sites Cortese List is a planning document used by the state, local agencies and developers to comply with CEQA requirements in providing information about the location of hazardous materials release sites. Government Code section 65962.5 requires the California EPA to develop at least annually an updated Cortese List. DTSC is responsible for a portion of the information contained in the Cortese List. Other state and local government agencies are required to provide additional hazardous material release information for the Cortese List.

California Health & Safety Code, Hazardous Materials Release Response Plans and Inventory. Two programs found in the H&SC Chapter 6.95 are directly applicable to the CEQA issue of risk due to hazardous substance release. In San Diego County, these two programs are referred to as the Hazardous Materials Business Plan (HMBP) Program and the CalARP program. DEH is responsible for the implementation of the HMBP program and the CalARP program in San Diego County. The HMBP and CalARP Program provide threshold quantities for regulated hazardous substances. When the indicated quantities are exceeded, a HMBP or Risk Management Plan (RMP) is required pursuant to the regulation. Congress requires the EPA Region 9 to make RMP information available to the public through the EPA's Envirofacts Data Warehouse. The Envirofacts Data Warehouse is considered the single point of access to select EPA environmental data.

Title 14 Division 1.5 of the California Code of Regulations. CCR Title 14 Division 1.5 establishes the regulations for California Department of Forestry and Fire Protection (Cal Fire) and is applicable in all State Responsibility Areas (SRA)—areas where Cal Fire is responsible for wildfire protection. Among other things, Title 14 establishes minimum standards for emergency access, fuel modification, setback to property line, signage, and water supply.

Title 22 of the California Code of Regulations & Hazardous Waste Control Law, Chapter 6.5. The DTSC regulates the generation, transportation, treatment, storage and disposal of hazardous waste under RCRA and the California Hazardous Waste Control Law. Both laws impose "cradle to grave" regulatory systems for handling hazardous waste in a manner that protects human health and the environment.

Title 23 of the California Code of Regulations, Underground Storage Tank Act. The Underground Storage Tank (UST) monitoring and response program is required under

Chapter 6.7 of the H&SC and Title 23 of the CCR. The program was developed to ensure that the facilities meet regulatory requirements for design, monitoring, maintenance, and emergency response in operating or owning USTs.

Title 27 of the California Code of Regulations, Solid Waste. Title 27 of the CCR contains a waste classification system that applies to solid wastes that cannot be discharged directly or indirectly to waters of the state and which therefore must be discharged to waste management sites for treatment, storage, or disposal. The Local Enforcement Agency (LEA) regulates the operation, inspection, permitting and oversight of maintenance activities at active and closed solid waste management sites and operations.

California Health and Safety Code Section 25270 etc., Aboveground Petroleum Storage Act. The Aboveground Petroleum Storage Act requires registration and spill prevention programs for above ground storage tanks (ASTs) that store petroleum. In some cases, ASTs for petroleum may be subject to groundwater monitoring programs that are implemented by the Regional Water Quality Control Boards and the State Water Board.

California Human Health Screening Levels. The California Human Health Screening Levels (CHHSLs or "Chisels") are concentrations of 54 hazardous chemicals in soil or soil gas that the California EPA considers to be below thresholds of concern for risks to human health. The CHHSLs were developed by the Office of Environmental Health Hazard Assessment on behalf of the California EPA. The CHHSLs were developed using standard exposure assumptions and chemical toxicity values published by the EPA and the California EPA. The CHHSLs can be used to screen sites for potential human health concerns where releases of hazardous chemicals to soils have occurred. Under most circumstances, the presence of a chemical in soil, soil gas, or indoor air at concentrations below the corresponding CHHSL can be assumed to not pose a significant health risk to people who may live or work at the site. There are separate CHHSLs for residential and commercial/industrial sites.

SB 1889, Accidental Release Prevention Law/California Accidental Release Prevention Program. SB 1889 required California to implement a new federally mandated program governing the accidental airborne release of chemicals promulgated under section 112 of the Clean Air Act. Effective January 1, 1997, CalARP replaced the previous California Risk Management and Prevention Program and incorporated the mandatory federal requirements. CalARP addresses facilities that contain specified hazardous materials, known as "regulated substances" that, if involved in an accidental release, could result in adverse off-site consequences. CalARP defines regulated substances as chemicals that pose a threat to public health and safety or the environment because they are highly toxic, flammable, or explosive.

Emergency Response to Hazardous Materials Incidents. California has developed an Emergency Response Plan to coordinate emergency services provided by federal, state, and local government, and private agencies. The plan is administered by the California Emergency Management Agency (Cal EMA) and includes response to hazardous materials incidents. Cal EMA coordinates the response of other agencies, including the California EPA, California Highway Patrol, California Department of Fish and Game, Regional Water Quality Control Board, San Diego Air Pollution Control District, the City of San Diego Fire Department, and DEH-Hazardous Incident Response Team.

California Fire Code. The California Fire Code (CFC) is Chapter 9 of Title 24 of the California Code of Regulations. It is created by the California Building Standards Commission and it is based on the International Fire Code created by the International Code Council. It is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The CFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The CFC and the California Building Code (CBC) use a hazard classification system to determine what protective measures are required to protect fire and life safety. These measures may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the CFC employs a permit system based on hazard classification. The CFC is updated every three years.

California Education Code. The California Education Code (CEC) establishes the law for California public education. CEC requires that the DTSC be involved in the environmental review process for the proposed acquisition and/or construction of school properties that will use state funding. The CEC requires a Phase I Environmental Site Assessment be completed prior to acquiring a school site or engaging in a construction project. Depending on the outcome of the Phase 1 Environmental Site Assessment, a Preliminary Environmental Assessment and remediation may be required. The CEC also requires potential, future school sites that are proposed within two miles of an airport to be reviewed by Caltrans Division of Aeronautics. If Caltrans does not support the proposed site, no state or local funds can be used to acquire the site or construct the school.

California State Aeronautics Act. The California State Aeronautics Act is implemented by Caltrans Division of Aeronautics. The purpose of this Act is to: 1) foster and promote safety in aeronautics, 2) ensure states provide laws and regulations relating to aeronautics are consistent with federal aeronautics laws and regulations, 3) assure that persons residing in the vicinity of airports are protected against intrusions by unreasonable levels of aircraft noise, and 4) develop informational programs to increase the understanding of current air transportation issues. Caltrans Division of Aeronautics issues permits for and annually inspects hospital heliports and public-use airports, makes recommendations regarding proposed school sites within two miles of an airport runway, and authorizes helicopter landing sites at/near schools.

State Fire Regulations. State fire regulations are set forth in sections 13000 et seq. of the California H&SC, which include regulations concerning building standards (as also set forth in the CBC), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training. The state Fire Marshal enforces these regulations and building standards in all state-owned buildings, state-occupied buildings, and state institutions throughout California.

California Emergency Services Act. This Act was adopted to establish the state's roles and responsibilities during human-made or natural emergencies that result in conditions of disaster and/or extreme peril to life, property, or the resources of the state. This Act is intended to protect health and safety by preserving the lives and property of the people of the state.

California Natural Disaster Assistance Act. The Natural Disaster Assistance Act (NDAA) provides financial aid to local agencies to assist in the permanent restoration of public real property, other than facilities used solely for recreational purposes, when such real property has been damaged or destroyed by a natural disaster. The NDAA is activated after the following occurs: 1) a local declaration of emergency; or 2) Cal EMA gives concurrence with the local declaration, or the Governor issues a Proclamation of a State Emergency. Once the NDAA is activated, local government is eligible for certain types of assistance, depending upon the specific declaration or proclamation issued.

5.10.8.3 Methodology

As part of the Convair Lagoon Alternative, an HHMTR was prepared by Ninyo and Moore in May 2011. This report is included as Appendix M to this EIR. The purpose of the HHMTR was to document possible environmental impacts at the Convair Lagoon Alternative site from potential releases of hazardous materials or wastes during construction activities, to document the significance of impacts, and to identify measures that could be implemented to reduce or mitigate the potential impacts. As part of the HHMTR, a site reconnaissance was performed and a review of physical setting information (e.g., topographic, geologic maps, groundwater data) pertaining to the site area was performed. Federal, state, and local on-line regulatory agency databases and lists for the site area were also reviewed. Available maps, reports, and other hazards and hazardous materials documents pertaining to the site area, including, but not limited to, CAOs, WDRs, and technical reports prepared by others were also reviewed. The locations of current and proposed schools, based on review of available maps and/or consultation with the applicable public school district were also documented. Finally, within the HHMTR, potential impacts to sensitive receptors (e.g., schools, hospitals) from exposure to hazardous materials associated with the site were evaluated.

5.10.8.4 Thresholds of Significance

Threshold 5.10.8.1: Transport, Use and Disposal of Hazardous Materials. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant impact if it would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Threshold 5.10.8.2: Accidental Release of Hazardous Materials. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant impact if it would create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Threshold 5.10.8.3: Hazards to Schools. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant impact if it would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Threshold 5.10.8.4: Existing Hazardous Materials Site. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant impact if it would result in human habitation or occupation on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 (Cortese List) and, as a result, would create a significant hazard to the public or the environment.

Threshold 5.10.8.5: Public and Private Airports. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant impact if it would locate development within two miles of a public or private airport, and would result in a safety hazard for people residing or working in the project area.

Threshold 5.10.8.6: Emergency Response and Evacuation Plans. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would have a significant impact if it would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Threshold 5.10.8.7: Wildland Fires. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would have a significant impact if it would expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

5.10.8.5 Impacts and Mitigation Measures

Less Than Significant Impacts

Threshold 5.10.8.3: Hazards to Schools. As part of the HHMTR, the locations of sensitive receptors for hazardous materials impacts, such as schools and hospitals, were documented. Based upon a review of background information, including the DTSC Envirostor online database, Thomas Brothers Guide maps, topographic maps, and online resources, the HHMTR determined that no sensitive receptors, including hospitals, schools, daycare, and education-related facilities, are within 0.8-mile of the Convair Lagoon Alternative site. Therefore, the Convair Lagoon Alternative would result in a less than significant impact to schools because no school facilities are located within one-quarter mile of the Convair Lagoon Alternative site. Refer to Section 4.3, Hazards and Hazardous Materials of this EIR for impacts related to hazards to schools from dredging and dewatering activities at the Shipyard Sediment Site.

Threshold 5.10.8.5: Public and Private Airports. The San Diego International Airport (SDIA) is located immediately north of the Convair Lagoon site. The Naval Air Station North Island (NASNI) is located in the city of Coronado, south of the Convair Lagoon Site. The San Diego International Airport covers 661 acres and consists of a single, 9,401 foot-long 200-foot wide east-west runway, two main terminals and a commuter terminal. The Convair Lagoon site is within the SDIA Airport Influence Area as shown in the 2004 SDIA ALUCP (SDCRAA, 2004). The SDIA Airport Influence Area encompasses those areas adjacent to airports that could be impacted by noise levels exceeding the California State Noise Standards or where height restrictions would be needed to prevent obstructions to navigable airspace, as outlined in FAA regulations. An ALUCP for NASNI has not yet been adopted and is pending the adoption of updated AICUZs from the Department of Defense (SDCRAA, 2010c). NASNI operates a mixture of jet fighter, transport, and helicopter aircraft.

Title 14 of the Code of Federal Regulations Part 77, Objects Affecting Navigable Airspace, establishes imaginary surfaces for airports and runways as a means to identify objects that are obstructions to air navigation. The Federal Aviation Administration (FAA) uses Part 77 and Terminal Instrument Procedures (TERPS) obstruction standards as elevations above which structures may constitute a safety problem. The Part 77 regulations require that anyone proposing to construct or use an object, which could affect the navigable airspace around an airport using the Part 77 notification criteria as shown in Table 5-33, submit information about the proposed construction to the FAA. Of the criteria listed in Table 5-33, proposed projects that exceed an imaginary 100:1 surface within 20,000 feet of a civilian or military airport or have a height exceeding 200 feet above ground level are two of the more typical notification criteria that require project applicants to notify the FAA. Any proposed project having a height exceeding 200 feet above ground level at any location is required to notify the FAA.

Table 5-33: Summary of the Part 77 Notification Criteria

• Any construction or alteration exceeding 200 ft above ground level.
• Any construction or alteration: a) within 20,000 ft of a public use or military airport which exceeds a 100:1 surface from any point on the runway of each airport with at least one runway more than 3,200 ft. b) within 10,000 ft of public use of military airport which exceeds a 50:1 surface from any point on the runway of each airport with its longest runway no more than 3,200 ft. c) within 5,000 ft of a public use heliport which exceeds a 25:1 surfaces.
• Any highway, railroad or other traverse way whose prescribed adjusted height would exceed that above noted standards.
• When requested by the FAA.
• Any construction or alteration located on public use airport or heliport, regardless of height or location.

When notified, the FAA then conducts an aeronautical study, the outcome of which is a determination as to whether the object would be a potential hazard to air navigation. The FAA examines the Terminal Instrument Procedures Tool surfaces for obstructions and safety issues as part of the obstruction evaluation for a proposed project. If the proposed object is concluded to pose a hazard, the FAA may object to its construction and issue a determination of a hazard to air navigation, examine possible revisions of the proposal to eliminate the problem, require that the project be appropriately marked and lighted as an airspace obstruction, and/or initiate changes to the aircraft flight procedures for the airport so as to account for the object (CSD, 2007).

Construction of the Convair Lagoon Alternative would involve the use of cranes, although none of these cranes are anticipated to be over 200 feet in height. In the event a crane over 200 feet in height would be used during construction, this would trigger the FAA Notification process under Title 14 of the Code of Federal Regulations Part 77 for both the SDIA and the NASNI. Compliance with this notification process would mitigate any potential impacts to SDIA and NASNI from the use of cranes during construction activities associated with the Convair Lagoon Alternative. Upon completion of construction, all cranes would be removed from the area and the site would be converted to an undeveloped, above ground parcel of land with no structures. No development would be located on the site and operation of the Convair Lagoon Alternative would not result in any safety hazards for people residing or working in the area from SDIA or NASNI. Impacts would be less than significant. Refer to Section 4.3, Hazards and Hazardous Materials, of this EIR for impacts related to hazards to public and private airports from dredging and dewatering activities at the Shipyard Sediment Site.

Threshold 5.10.8.6: Emergency Response and Evacuation Plans. Interference with an adopted emergency response or evacuation plan would result in an adverse physical effect to people or the environment by potentially increasing the loss of life and property in the event of a disaster. The Convair Lagoon Alternative site is not part of a public emergency response or evacuation plan adopted by the San Diego Unified Port District (District) or City of San Diego. Therefore, the Convair Lagoon Alternative would not impair implementation of, or physically interfere with, the implementation of any plan, and would therefore not result in a significant impact. Refer to Section 4.3, Hazards and Hazardous Materials, of this EIR for impacts related to emergency response and evacuation plans from dredging and dewatering activities at the Shipyard Sediment Site.

Threshold 5.10.8.7: Wildland Fires. The Convair Lagoon Alternative site is situated in an urban area and is not located within or adjacent to designated wildlands, nor is it within or near the wildland urban interface areas. The Convair Lagoon Alternative site is not located in a community considered at risk from wildfire and is mapped as a Non-Very High Fire Hazard Severity Zone by Cal Fire (Cal Fire, 2010). Therefore, the Convair Lagoon Alternative would not result in a significant impact from a potential wildland fire hazard.

Potentially Significant Impacts

Threshold 5.10.8.1: Transport, Use and Disposal of Hazardous Materials. The construction of the Convair Lagoon Alternative would result in the transportation, use and disposal of hazardous materials. In addition, the Convair Lagoon Alternative site is the location of a former PCB contamination area that has been capped. However, since that cap was installed PCB contamination has been discovered in sediments above the cap.
The PCB contamination that has been discovered above the cap is the subject to CAO R9-2004-0258, as amended. The CAO states that there are three areas of concern with regard to the transport of wastes from the TDY facility to Convair Lagoon: 1) Convair Lagoon shoreline groundwater, 2) sediment in the storm water conveyance system that empties into Convair Lagoon/San Diego Bay, and 3) VOC-impacted groundwater seeping into the 54-inch and 60-inch storm drains. Although the CAO states that sediment transport to the lagoon is a concern, the storm drain inlets and laterals on the TDY facility were capped with concrete; therefore, no additional input of sediment to the storm water conveyance system from the TDY facility is known to be occurring. However, there is the potential for PCB impacted sediments to be transported to Convair Lagoon from sites up gradient of the TDY facility, which continue to discharge into the storm water conveyance system. There is a potential risk to human health associated with the incidental ingestion of or contact with the sediments in the lagoon. The CAO requires that soil and groundwater contamination at the TDY facility be remediated to the identified clean up levels, visible sediment should be removed from within the 60-inch storm drain and associated energy dissipater, and a remedial action plan be submitted to detail how the cleanup levels will be achieved. The San Diego Water Board is responsible for ensuring that the remediation is performed in accordance with the requirements of this CAO. As discussed above, as required by the CAO issued by the San Diego Water Board for the TDY facility, numerous investigations have been performed to

evaluate impacted soil and groundwater, potential remedial alternatives, and potential sources of PCBs in the storm water conveyance system. The potential sources of PCBs in the storm water conveyance system have been identified as on-site and off-site soil, groundwater, sediment, building materials, and rainfall. Specific sites up gradient of TDY have not been identified as sources of PCBs in the storm water conveyance system.

A Remedial Investigation Feasibility Study (RI/FS) was prepared by the San Diego Water Board, which states that the recommended remedial action for addressing PCB impacted sediments in the 60-inch storm water conveyance system is to clean out sediments and remove the storm water conveyance system laterals on the site after the existing TDY site buildings (a potential source of PCBs) have been removed. The RI/FS also states that the recommended remedial action for PCB impacts to groundwater at the TDY site is to continue groundwater monitoring under the supervision of the San Diego Water Board to confirm that PCB impacted groundwater is not migrating into Convair Lagoon at levels that exceed existing regulatory limits. The San Diego Water Board will be responsible for ensuring that the remediation of the TDY facility is performed in accordance with the requirements of the applicable CAOs.

A feature of the Convair Lagoon Alternative is that this PCB contamination would be resolved to the satisfaction of the State Water Board before construction of this alternative would occur.

The placement of contaminated dredged material from the Shipyard Sediment Site into the Convair Lagoon would involve the transportation of contaminated, hazardous materials across San Diego Bay by barge, a distance of approximately 4.5 miles. The approximate barge route for the Convair Lagoon Alternative is identified in Figure 5-2 and would begin at the Shipyard Sediment Site, near the 28th Street Pier and travel north within the San Diego Bay Channel to the Convair Lagoon Alternative Site. Transportation of the dredged sediment to either the Convair Lagoon Alternative Site or staging areas would require a total of approximately 116 barge trips, using barges with an average holding capacity of 1,250 cubic yards. During Phase 4 of the CDF construction, it is assumed that a maximum of four tug boats and barges would be required per day and that each of the tug boats would be operating for eight hours per day. Therefore, construction of the Convair Lagoon Alternative would involve the transportation and use of hazardous materials.

Additionally, the Convair Lagoon Alternative site currently includes an approximately 7-acre sand cap that covers areas within the site where sediments contained high PCBs concentrations. The most recent groundwater monitoring report (2010) for the Convair Lagoon Site, required by CAO R9-2004-0258, found low levels of VOCs and trace levels of PCBs on the top of the existing 7-acre sand cap, attributed to an existing 60" storm drain that outlets on the site. Construction of the Convair Lagoon Alternative site would require the excavation of existing sediment in the area proposed for the containment barrier. Due to the location of the proposed containment barrier, south of the existing sand cap, any existing PCB concentrations in the area of excavation would be lower than those found on top of the existing cap. Therefore, the on-site material excavated for construction of the containment barrier is unlikely to have high contamination levels and would be reused on site as fill, assuming the contamination levels would not exceed those allowed by the State Water Board for this alternative. In the event excavated sediments were found to not qualify for on-site reuse, then these excavated sediments would require disposal at an appropriate off-site facility. Additional use of hazardous materials on site includes construction equipment that involves the use of oils and hydrocarbons, which are considered hazardous materials.

Construction and operation of the Convair Lagoon Alternative would comply with the numerous federal, state and local regulations described above in the Regulatory Setting subsection that require strict adherence to specific guidelines regarding the use, transportation, and disposal of hazardous materials. Regulations that would be required of those transporting, using or disposing of hazardous materials include RCRA, which provides the ‘cradle to grave’ regulation of hazardous wastes; CERCLA, which regulates closed and abandoned hazardous waste sites; the Hazardous Materials Transportation Act, which governs hazardous materials transportation on U.S. roadways; IFC, which creates procedures and mechanisms to ensure the safe handling and storage of hazardous materials; Title 22, which regulates the generation, transportation, treatment, storage and disposal of hazardous waste; CCR Title 27, which regulates the treatment, storage and disposal of solid wastes; the County Consolidated Fire Code, which regulates hazardous materials and hazardous substance releases; and the County of San Diego DEH-HMD, which conducts ongoing routine inspections to ensure compliance with existing laws and regulations. Further, this EIR which addresses the Shipyard Sediment Site project contains detailed mitigation measures related to the transportation, use and disposal of contaminated dredged sediment. The Convair Lagoon Alternative would comply with these measures.

Compliance with the applicable federal, state and local regulations and implementation of mitigation measures 4.3.1 through 4.3.8, listed in the Shipyard Sediment Site EIR Hazards and Hazardous Materials Section 4.3, would reduce the potential for the Convair Lagoon to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Therefore, impacts related to the transport use and disposal of hazardous materials would be less than significant. Refer to Section 4.3, Hazards and Hazardous Materials, of this EIR for impacts related to hazardous material use, transport and disposal from dredging and dewatering activities at the Shipyard Sediment Site.

Threshold 5.10.8.2: Accidental Release of Hazardous Materials. As described above, implementation of the Convair Lagoon Alternative would result in the transportation and use of contaminated dredge material from the Shipyard Sediment Site. Additionally, the existing Convair Lagoon Site would include excavation activities within the Convair Lagoon Site, which has documented existing hazardous material contamination. Although construction activities involve strict regulations regarding monitoring and handling, accidental release of hazardous materials due to natural disasters, human error or misuse is possible. For example, contaminated sediments on the Convair Lagoon site and contaminated sediments from the

Shipyard Site may be disturbed during construction activities. Sediments could be disturbed during storm drain extensions construction, sediment stockpiling, containment barrier rock placement, barge transportation and placement of sediment. Sediments transported by barge to the Convair Lagoon Alternative Site could accidently be released into the bay by wind or an unanticipated spill. Disturbance of the sediments from excavation activities within the Convair Lagoon and placement of Shipyard Sediments into the Convair Lagoon could cause a release of the contaminants that may result in an impact to human health and the environment. Additionally, demolition and construction equipment could spill/leak fuels, oils, or other hazardous fluids during normal operations, refueling, or maintenance. However, any leaks/spills that occur would likely be localized, short-term, and cleaned up immediately in accordance with existing regulations, such as the Code of Federal Regulations Title 40, California Code of Regulations Title 22.

Numerous federal, state, and local regulations exist that reduce the potential for humans or the environment to be affected by an accidental release of hazardous materials. These include, but are not limited to, the following: 1) Chemical Accident Prevention Provision, which requires companies that use certain hazardous materials to develop a Risk Management Program; 2) RCRA, which requires infrastructure at the state and local levels to plan for chemical emergencies; 3) Robert T. Stafford Disaster Relief and Emergency Assistance Act, which provides the statutory framework for a Presidential declaration of an emergency or major disaster; 4) California H&SC, which provides threshold quantities for regulated hazardous substances and the establishment of Hazardous Materials Release Response Plans; 5) CCR Title 23, which ensures that facilities meet regulatory requirements for underground storage tanks ; 6) Aboveground Petroleum Storage Act, which requires registration and spill prevention programs for ASTs; 7) CalARP, which governs the accidental airborne release of chemicals; 8) Emergency Response to Hazardous Materials Incidents; which provides coordination between federal, state, local government, and private agencies in the event of an emergency; and 9) California Emergency Services Act, which establishes the state's role during natural or man-made emergencies. As mentioned above, the DEH-HMD also conducts ongoing routine inspections to ensure compliance with existing laws and regulations; to identify safety hazards that could cause or contribute to an accidental spill or release; and to suggest preventative measures to minimize the risk of a spill or release of hazardous substances. Further, the EIR for the Shipyard Sediment Site project contains detailed mitigation measures related to the accidental release of hazardous materials. The Convair Lagoon Alternative would comply with these measures.

Compliance with the applicable federal, state and local regulations and implementation of the mitigation measures 4.3.1 through 4.3.8, listed in the Shipyard Sediment Site EIR Hazards and Hazardous Materials Section 4.3, would reduce the potential for the Convair Lagoon to create a significant hazard to the public or the environment through the accidental release of hazardous materials. Therefore, impacts would be less than significant. Refer to Section 4.3, Hazards and Hazardous Materials, of this EIR for impacts related to an accidental release of hazardous materials from dredging and dewatering activities at the Shipyard Sediment Site.

Threshold 5.10.8.4: Existing Hazardous Materials Sites. Typical adverse effects related to existing contamination from hazardous substances relate to the potential for site conditions or site contamination to result in adverse human or environmental effects. As discussed above, the Convair Lagoon site is subject to San Diego Water Board WDR Order No. 98-21, CAO 86-92 and CAO R9-2004-0258 due to past and existing hazardous materials contamination on the site. Therefore, the existing site for the Convair Lagoon Alternative is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 (Cortese List). Additionally, as part of the Convair Lagoon Alternative, dredged contaminated sediment from the Shipyard Sediment Site would be placed within the lagoon as fill. The Shipyard Sediment Site is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5.

Sediments at the Convair Lagoon site and the dredged sediments from the Shipyard Sediment Site are documented to contain levels of hazardous contaminants above regulatory limits. Both the Convair Lagoon and Shipyard Sediment Site contaminated sediments are submerged within the San Diego Bay and completely saturated. Therefore, sediment contamination affects both the sediment particles and associated water. Contaminated sediments on the Convair Lagoon site and contaminated sediments from the Shipyard Sediment Site may be disturbed during construction activities. Sediments could be disturbed during storm drain extensions construction, sediment stockpiling, containment barrier rock placement, transportation by barge, or during placement. Disturbance of the sediments from excavation activities within the Convair Lagoon and placement of Shipyard Sediments into the Convair Lagoon could cause a release of the contaminants that may result into an impact to human health and the environment.

For example, as the dredged sediment from the Shipyard Sediment Site is placed into the Convair Lagoon Alternative site, some of the sediments will be suspended in the bay water and may flow back into the bay. However, the placement of dredged contaminated sediment would not take place until after the containment barrier is constructed. Additionally, the placement of dredged materials within the Convair Lagoon site would occur at a pace that would allow displaced water to flow through the containment barrier prior to entering San Diego Bay. The containment barrier rock and filter within the barrier would act as a filter to minimize sediment particles from leaving the site (SAIC, 2009). The controlled placement of the dredged material and the installation of the containment barrier would prevent any significant impacts from suspended sediments flowing back into the bay.

In addition, the Convair Lagoon Alternative site is currently subject to CAO R9-2004-0258 to address newly discovered PCB contamination above a cap which covers prior PCB contamination. Therefore, the Convair Lagoon Alternative would use a site that is currently contaminated with a hazardous material. However, this existing contamination is being addressed through CAO R9-2004-0258, as amended, and must be resolved before the Convair Lagoon Alternative could be implemented. The San Diego Water Board is responsible for ensuring that the remediation is performed in accordance with the requirements of this CAO. Upon completion of the Convair Lagoon Alternative, the San

Diego Water Board would be responsible for ensuring that the remediation technique performs in accordance with the requirements of the agency.

Multiple federal and state regulations exist that prevent or reduce hazards to the public and environment from existing hazardous materials sites. These include, but are not limited to, the following: 1) CERCLA, which regulates closed and abandoned hazardous waste sites; 2) PRGs, which establishes tools for evaluating and cleaning up contaminated sites; 3) Cortese List, which provides information about the location of hazardous materials release sites; and 4) CHHSLs, which evaluates sites with potential human health concerns. The San Diego County SAM Program, within the Land and Water Quality Division of the DEH, maintains a list of contaminated sites that have previously or are currently undergoing environmental investigations and/or remedial actions. In addition, the RWQCB may issue a CAO and WDRs specific to the site that may specify land use restrictions/activity and use limitation to minimize future disturbance of the sediments within the CDF. Further, Section 4.3 of this EIR ~~the EIR for the Shipyard Sediment Site project~~ contains detailed mitigation measures for the proposed project related to existing hazardous material contamination. The Convair Lagoon Alternative is required to comply with these measures.

Compliance with the applicable federal, state and local regulations and implementation of the Mitigation Measures 4.3.1 through 4.3.8, listed in the ~~Shipyard Sediment Site EIR~~ Hazards and Hazardous Materials Section, Section 4.3, of this EIR, would reduce the potential for the Convair Lagoon Alternative to create a significant hazard to the public or the environment due to the presence of hazardous materials on site. Therefore, impacts would be less than significant. Refer to Section 4.3, Hazards and Hazardous Materials, of this EIR for impacts related to existing hazardous material sites from dredging and dewatering activities at the Shipyard Sediment Site.

Mitigation Measures

The Convair Lagoon Alternative is required to implement Mitigation Measures 4.3.1 through 4.3.8, listed in the Shipyard Sediment Site EIR, Section 4.3, Hazards and Hazardous Materials. These measures require the implementation of: secondary containment, a dredging management plan, a contingency plan, a health and safety plan, a communication plan, a sediment management plan, and a hazardous materials transportation plan and traffic control plan. Under this alternative, mitigation measures 4.3.1 through 4.3.8 would be applied to all construction activities associated with the Convair Lagoon Alternative and would not be limited to dredging and dewatering activities at the Shipyard Sediment Project Site.

Cumulative Impacts

The geographic scope of the cumulative impact analysis for hazards and hazardous materials varies depending on the type of hazard that could occur. The geographic scope for each of the seven hazards and hazardous material topic areas is described below as part of the cumulative impact discussion for each of the topics.

Threshold 5.10.8.1: Transportation, Use and Disposal of Hazardous Materials. The geographic scope of cumulative impact analysis for the transportation, use and disposal of hazardous materials includes the primary transportation corridors for the transportation, use and disposal of contaminated sediment. Primary transportation corridors include: 1) Interstate 5, from San Diego to the Kettleman Hills Disposal Facility in Kings County for truck traffic; and 2) Portions of the San Diego Bay between the Shipyard Sediment Site and the Convair Lagoon Alternative site for barge transport (see Figure 5-2). The transportation, use and disposal of hazardous materials would occur only during construction of the Convair Lagoon Alternative and is limited to water impacts from the transportation of dredged sediment from the Shipyard Sediment site to the Convair Lagoon Alternative site for placement; and land impacts from the transportation of approximately 21,510 cy of contaminated sediment from the Shipyard Sediment Site to the Kettleman Hills Disposal Facility for disposal. No routine transport, use or disposal of hazardous materials would occur during operation of the alternative because the Convair Lagoon Alternative is a construction project with no operational features.

Cumulative projects within the geographic scope of analysis, identified in Table 5-8, Cumulative Projects in the Vicinity of Convair Lagoon Alternative, are likely to result in new development which would include land facilities that involve the use, storage, disposal or transport of hazardous materials, and potentially increase hazards to the public or the environment. For example, the cumulative project West Side – Airport Facilities Project 6, would include a utility expansion and the construction of a co-generation facility, which would require the use and transportation of hazardous materials. However, unlike the Convair Lagoon Alternative, cumulative projects would only involve the transportation, use and disposal of hazardous materials on land and no transportation or use of hazardous materials on water would occur. Therefore, cumulative projects would have the potential to result in a significant cumulative impact from the use, transportation and disposal of hazardous materials on land but cumulative projects do not include features that involve the transport of hazardous materials on water and therefore a significant cumulative impact to water from the use, transportation and disposal of hazardous material within the bay would not occur. Similar to the Convair Lagoon Alternative, cumulative projects would be required to comply with regulations applicable to the use, disposal and transportation of hazardous materials on land, including RCRA, CERCLA, the Hazardous Materials Transportation Act, IFC, and CCRs Title 22 and Title 27. Cumulative project compliance with applicable regulations would ensure that a significant cumulative impact would not occur. Refer to the Regulatory Setting section above for additional information regarding existing federal and state regulations for hazardous materials. In addition, the implementation of mitigation measures 4.3.1 through 4.3.8, listed in the ~~Shipyard Sediment Site EIR~~ Hazards and Hazardous Materials Section, Section 4.3, of this EIR, would reduce the direct impacts of the Convair Lagoon Alternative to a less than significant impact. Therefore, the Convair Lagoon Alternative would result in a less than significant cumulative impact related to hazardous material use, disposal and transportation.

Threshold 5.10.8.2: Accidental Release of Hazardous Materials. The geographic scope of cumulative impact analysis for the accidental release of hazardous materials includes the primary transportation corridors for the disposal and use of contaminated sediment, which could be impacted in the event of an accidental release of contaminated sediment. Primary transportation corridors include: 1) Land areas along Interstate 5, from San Diego to the Kettleman Hills Disposal Facility in Kings County for truck traffic; and 2) Water areas of the San Diego Bay between the Shipyard Sediment Site and the Convair Lagoon Alternative site for barge transport (see Figure 5-2). The implementation of various cumulative projects, identified in Table 5-8, Cumulative Projects in the Vicinity of Convair Lagoon Alternative, would increase the likelihood of hazards to the public or the environment through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. However, unlike the Convair Lagoon Alternative, cumulative projects would most likely only involve the transportation, use and disposal of hazardous materials on land and no transportation or use of hazardous materials within water would occur. Cumulative projects would be subject to regulations regarding the handling of hazardous materials, such as Chemical Accident Prevention Provision, RCRA, Robert T. Stafford Disaster Relief and Emergency Assistance Act, California H&SC, CCR Title 23, Aboveground Petroleum Storage Act, CalARP, Emergency Response to Hazardous Materials Incidents, and the California Emergency Services Act. Cumulative project compliance with these regulations would ensure that a significant cumulative impact would not occur. Refer to the Regulatory Setting section above for additional information regarding existing federal and state regulations for hazardous materials. In addition, implementation of mitigation measures 4.3.1 through 4.3.8, listed in the ~~Shipyard Sediment Site EIR~~ Hazards and Hazardous Materials Section, Section 4.3, of this EIR would reduce the direct impacts of the Convair Lagoon Alternative to less than significant. Therefore, the Convair Lagoon Alternative would not result in a significant cumulative impact related to the accidental release of hazardous materials.

Threshold 5.10.8.3: Hazards to Schools. The geographic scope of cumulative impact analysis for hazards to schools includes a 1-mile radius immediately surrounding the Convair Lagoon Alternative site. This area is composed of a highly developed, industrial area containing many companies that regularly use and transport hazardous materials. Cumulative projects within the geographic scope of analysis, identified in Table 5-8, Cumulative Projects in the Vicinity of Convair Lagoon Alternative, that emit or handle hazardous waste materials have the potential to be located adjacent to schools. However, cumulative projects would be subject to CEQA/NEPA review and CEC requirements. Cumulative project compliance with applicable regulations would ensure that a significant cumulative impact would not occur. Refer to the Regulatory Setting section above for additional information regarding existing federal and state regulations. Furthermore, since no schools are located within a ¼-mile of the Convair Lagoon Alternative site, the proposed project would not cause or contribute to a cumulative impact relating to hazards to schools.

Threshold 5.10.8.4: Existing Hazardous Materials Site. The geographic scope of cumulative impact analysis for existing hazardous materials sites includes a 1-mile radius immediately surrounding the Convair Lagoon Alternative site. This area encompasses a highly developed, industrial area with many companies that regularly use hazardous materials. As discussed in the existing environmental setting, four adjacent properties to the Convair Lagoon site have experienced existing or past hazardous materials contamination. Therefore, it is reasonable to assume that some cumulative project sites in the geographic scope of analysis, identified in Table 5-8, Cumulative Projects in the Vicinity of Convair Lagoon Alternative, would also have existing hazardous materials contamination, pursuant to Government Code section 65962.5. For example, the Teledyne Ryan Demolition Project occurs on an identified hazardous material site and involves the removal and disposal of these hazardous and contaminated materials. All cumulative projects would be required to comply with applicable federal, state and local regulations, which would ensure that a significant cumulative impact would not occur. As discussed above, the Convair Lagoon Alternative site is currently subject to CAO R9-2004-0258, as amended, and is considered a site that is currently contaminated with a hazardous material. This existing contamination must be resolved before the alternative could be implemented. Compliance with the applicable federal, state and local regulations and implementation of the mitigation measures 4.3.1 through 4.3.8, listed in the Shipyard Sediment Site EIR Hazards and Hazardous Materials Section 4.3, would reduce the potential for the Convair Lagoon to create a direct significant hazard to the public or the environment due to the presence of hazardous materials on site. Therefore, the Convair Lagoon Alternative would not cause or contribute to a cumulative impact relating to existing hazardous material contamination.

Threshold 5.10.8.5: Airports. The geographic scope of cumulative impact analysis for airports includes the Airport Influence Area for SDIA and NASNI. Cumulative projects in the area, identified in Table 5-8, Cumulative Projects in the Vicinity of Convair Lagoon Alternative, would potentially result in incompatible land uses within the vicinity of SDIA and NASNI, which could result in a potentially significant safety hazard for people residing or working in these areas. However, cumulative projects would be subject to safety regulations, such as ALUCPs, FAA standards and the State Aeronautics Act. Cumulative project compliance with these regulations would ensure that a significant cumulative impact would not occur. Refer to the Regulatory Setting section above for additional information regarding existing federal and state regulations pertaining to this topic.

Construction of the Convair Lagoon Alternative would involve the use of cranes, although none of these cranes are anticipated to be over 200 feet in height. In the event a crane over 200 feet in height would be used during construction, this would trigger the FAA Notification process under Title 14 of the Code of Federal Regulations Part 77 for both the SDIA and the NASNI. Compliance with this notification process would mitigate any potential impacts to SDIA and NASNI from the use of cranes during construction activities associated with the Convair Lagoon Alternative. Upon completion of construction, all cranes would be removed from the area and the site would be converted to an undeveloped, above ground parcel of land with no structures. No development would be located on the site and operation of the Convair Lagoon Alternative would not result in any safety hazards for people residing or working in the area from SDIA or NASNI. As a result, the proposed project would not cause or contribute to a cumulative impact relating to airport hazards.

Threshold 5.10.8.6: Emergency Response Plans and Routes. The geographic scope of cumulative impact analysis for emergency response plans and routes includes the city of San Diego and lands under the jurisdiction of the District. Cumulative projects, identified in Table 5-8, Cumulative Projects in the Vicinity of Convair Lagoon Alternative, would have the potential to impair existing emergency and evacuation plans. This could occur from an increase in population that emergency response teams are unable to service adequately in the event of a disaster; or evacuation route impairment if cumulative projects block evacuation or access roads. However, cumulative projects would be required to comply with applicable emergency response and evacuation policies outlined in regulations such as the Federal Response Plan, the California Emergency Services Act, and local fire codes. Cumulative project compliance with these regulations would ensure that a significant cumulative impact would not occur. Refer to the Regulatory Setting section above for additional information regarding existing federal and state regulations pertaining to this topic. The Convair Lagoon Alternative site is not part of a public emergency response or evacuation plan adopted by the District or City of San Diego. Therefore, the Convair Lagoon Alternative would not impair implementation of, or physically interfere with, the implementation of any plan, and would therefore not cause or contribute to a cumulative impact relating to emergency response plans and routes.

Threshold 5.10.8.7: Wildland Fire Hazards. The geographic scope of the cumulative impact analysis for wildland fire hazards includes the city of San Diego and lands under the jurisdiction of the District.

Some areas of southern California have a history of frequent and intensive wildland fires, which have exposed people and structures to a potentially significant loss of life and property. Cumulative projects, identified in Table 5-8, Cumulative Projects in the Vicinity of Convair Lagoon Alternative, within the geographic scope of analysis are located in developed areas with minimal potential for wildfires to occur and these areas are not located within wildland urban interface areas mapped by the California Department of Forestry and Fire Protection. Additionally, regulations exist to reduce hazards associated with wildland fires, which would further reduce cumulative project risk to below a level of significance. Since the Convair Lagoon Alternative site is situated in an urban area and is not located within or adjacent to designated wildlands, nor is it within or near the wildland urban interface areas, it would therefore not cause or contribute to a cumulative impact relating to wildland fire hazards.

Level of Significance After Mitigation

Upon implementation of mitigation measures 4.3.1 through 4.3.8, identified in ~~the EIR~~ Section 4.3, Hazards and Hazardous Materials, for the Shipyard Sediment Site, all Convair Lagoon Alternative impacts related to hazards and hazardous materials would be reduced to a level below significance.

Significant Unavoidable Adverse Impacts

No significant and unavoidable impacts related to hazards and hazardous materials would occur from implementation of the Convair Lagoon Alternative.

5.10.9 Hydrology and Water Quality

This section describes the existing hydrology and water quality on the Convair Lagoon site and analyzes the potential physical environmental effects of the Convair Lagoon Alternative related to surface water quality, groundwater, drainage and flooding. Information pertaining to water quality and hydrology is based on: the *Water Quality Technical Study for the Shipyard Sediment Alternative Analysis Convair Lagoon*, prepared by Ninyo and Moore in May 2011, and included as Appendix O of this EIR; the *San Diego Bay Integrated Natural Resources Management Plan* (U.S. Navy, 2007); and the *San Diego Regional Water Quality Control Board* (San Diego Water Board) *Water Quality Control Plan* (Basin Plan) *for the San Diego Basin* (SDRWQCB, 1994). This analysis hereby incorporates by reference the *San Diego Bay Integrated Natural Resources Management Plan* and the San Diego Water Board Basin Plan. The *San Diego Bay Integrated Natural Resources Management Plan* can be found online at http://sdbayinrmp.org/, while the San Diego Water Board Basin Plan can be found online at http://www.swrcb.ca.gov/sandiego/water_issues/programs/basin_plan/.

5.10.9.1 Existing Environmental Setting

Hydrologic Unit. The Convair Lagoon site is located in the Pueblo San Diego Hydrologic Unit of the San Diego Bay watershed. The San Diego Bay watershed encompasses a 415 square mile area that extends easterly from the San Diego Bay for more than 50 miles to the Laguna Mountains. The watershed elevation ranges from sea level, at San Diego Bay, to a maximum elevation of approximately 6,000 feet above sea level at its eastern boundary. The headwaters of the watershed begin in the eastern, unincorporated area of San Diego County and then transect all or portions of seven cities, including San Diego, National City, Chula Vista, Imperial Beach, Coronado, Lemon Grove, and La Mesa. The San Diego Bay watershed is included within three hydrologic units: the Pueblo San Diego Hydrologic Unit, the Sweetwater Hydrologic Unit, and the Otay Hydrologic Unit.

The Pueblo San Diego Hydrologic Unit is a triangular shaped area of approximately 60 square miles without a major stream system. The Pueblo San Diego Hydrologic Unit is the smallest of the three San Diego Bay Hydrologic Units and covers just over 36,000 acres.

Major water features include Switzer Creek, Chollas Creek, Paleta Creek, and San Diego Bay. The Pueblo San Diego Hydrologic Unit is the most developed and most densely populated hydrologic unit in the San Diego Bay watershed. The major population center in the hydrologic unit is the city of San Diego.

Surface Water Quality. The Convair Lagoon Alternative site is located within San Diego Bay. Present day water quality concerns for the San Diego Bay focus mainly on the quantities of contaminants found in the water, sediments, and biota (such as shellfish, and other marine organisms). The entire San Diego Bay is listed as an impaired water body (under Clean Water Act (CWA) section 303[d]) by the California State Water Resources Control Board (State Water Board) due to benthic community degradation and toxicity. Sources that may be contributing pollutants to the bay's environment include surface runoff from urban watersheds, industrial facilities, vessel activities from recreational marinas and commercial ports, aerial deposition, hazardous material spills, storm drains, and sewage spills. With the long history of industrial, marina, and military use of the bay, "legacy" pollutants continue to remain from past practices despite curtailment of new discharges. Surface runoff is considered the largest source of pollutants in the region, contributing more heavy metals than all other sources combined to the bay. In addition to chemical and bacterial pollution, debris from human activities (such as plastic, metal materials, bottles, and cans) is also common in the bay and harbors.

Within the San Diego Basin Plan, the San Diego Bay has been assigned beneficial uses for industrial service supply, navigation, contact and non-contact water recreation, commercial and sport fishing, preservation of biological habitats of special significance, estuarine habitat, wildlife habitat, rare/threatened/endangered species, marine habitat, migration of aquatic organisms, spawning/reproduction/early development and shellfish harvesting.

Groundwater. The Convair Lagoon Alternative site is located within the Mission Valley Groundwater Basin. Depth to groundwater on the Convair Lagoon Alternative site generally ranges from 6 to 11 feet below ground surface and generally flows south toward the bay. According to the Basin Plan, groundwater in the area of Convair Lagoon has been exempted from municipal supply and does not currently have existing or potential beneficial uses. Currently, there are eight groundwater monitoring wells located on the landside portion of the Convair Lagoon Alternative site to monitor contamination from former Teledyne-Ryan operations.

Topography. The landside portion of the Convair Lagoon Alternative site varies in elevation from approximately 10 to 14 feet above sea level (mean lower low water), while the lagoon floor elevation varies from sea level to approximately -15 feet below sea level. Figure 5-13 illustrates the existing lagoon floor topography.

5.10.9.2 Regulatory Setting

Federal

Clean Water Act. The 1972 CWA was designed to restore and maintain the chemical, physical, and biological integrity of the waters of the U.S. The CWA also directs states to establish water quality standards for all waters of the U.S. and to review and update such standards on a triennial basis. The U.S. Environmental Protection Agency (EPA) has delegated responsibility for implementation of portions of the CWA in California to the State Water Board and the Regional Water Quality Control Boards (RWQCB). This includes water quality control planning and control programs such as the National Pollutant Discharge Elimination System (NPDES), which seeks to control water pollution through the issuance of permits regulating the discharge of pollutants into waters of the U.S. Section 404 of the CWA regulates the discharge of dredged and/or fill material into the waters of the U.S., while section 401 of the CWA requires certification from the state agency that the project will comply with water quality standards. The Convair Lagoon Alternative will require both a 404 permit and a 401 permit. Section 303(d) of the CWA requires that impaired water bodies are identified and listed, after which a total maximum daily load (TMDL) must be developed for each contaminant. The Convair Lagoon site is located within the San Diego Bay, which is listed as a 303(d) impaired water body for Polychlorinated biphenyl (PCBs). A TMDL for PCBs in San Diego is projected to be completed in 2019.

National Pollutant Discharge Elimination System (NPDES) Program. The CWA section 402(p) establishes a framework for regulating municipal and storm water discharges under the NPDES program and requires that storm water associated with industrial activity that discharges directly to surface waters or discharges indirectly through storm drains must be regulated by an NPDES permit. The Convair Lagoon Alternative may be subject to two NPDES permits, as described below, or may be issued an individual permit by the San Diego Water Board.

Industrial Storm Water General Permit, Order 97-03-DWQ. This NPDES permit regulates discharges associated with ten categories of industrial activities. The permit requires the development of a Storm Water Pollution Prevention Plan (SWPPP) and monitoring plan, which identifies potential sources of pollutants and the means to manage or reduce the storm water pollution from these sources, by Best Management Practices (BMPs).

Construction General Permit, Order 2009-0009-DWQ. This NPDES permit is required for construction sites with total disturbed area of one or more acres. Construction activities subject to the permit include grading, stockpiling and excavation. The permit requires a SWPPP that must include a visual monitoring program, a chemical monitoring program for “non-visible” pollutants to be implemented if there is a failure of BMPs, and a sediment monitoring plan, if the site discharges directly to a water body listed on the 303(d) list for sediment, such as the San Diego Bay.

Rivers and Harbors Appropriation Act. The Rivers and Harbors Appropriation Act prohibits the creation of any obstruction not affirmatively authorized by Congress, to the navigable capacity of any of the waters of the United States. Under section 10 of the Act, the building of any wharfs, piers, jetties, and other structures is prohibited without Congressional approval, and excavation or fill within navigable waters requires the approval of the Army Corps of Engineers (ACOE) Chief of Engineers. ACOE concerns include contaminated sediments associated with dredge or fill projects in navigable waters. The Convair Lagoon Alternative will require a section 10 permit for construction.

State

Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Control Act, enacted in 1969, authorizes the State Water Board to adopt, review, and revise policies for all waters of the state, including both surface and ground waters, and directs the RWQCBs to develop region-specific basin plans. Section 13170 of the California Water Code also authorizes the State Water Board to adopt water quality control plans on its own initiative. The purpose of these plans are to designate beneficial uses of the region's surface and ground waters, designate water quality objectives for the reasonable protection of those uses, and establish an implementation plan to achieve the objectives.

Local

San Diego Basin Plan. The San Diego Basin Plan, most recently amended in 2007, sets forth water quality objectives for constituents that could potentially cause an adverse effect or impact on the beneficial uses of water within the basin. Specifically, the Basin Plan is designed to accomplish the following: 1) designate beneficial uses for surface and ground waters, 2) set the narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's anti-degradation policy, 3) describe mitigation measures to protect the beneficial uses of all waters within the region, and 4) describe surveillance and monitoring activities to evaluate the effectiveness of the Basin Plan. The Basin Plan incorporates by reference all applicable State Water Board and San Diego Water Board plans and policies.

Port of San Diego Jurisdictional Urban Runoff Management Program. The San Diego Unified Port District (District) Environmental Services Department has prepared a Jurisdictional Urban Runoff Management Program Document (District JURMP) for all areas under the jurisdiction of the District, in accordance with the requirements of San Diego Water Board *Order No. 2007-0001 (NPDES Permit #CAS0108758)*, which serves as the District's Municipal Stormwater Permit. This document describes all the activities that the District has undertaken, is undertaking, or will undertake, to reduce discharges of pollutants and urban runoff flow to the municipal separate storm sewer system to the maximum extent practicable. The three major phases of urban development addressed by this program are the planning, the construction, and the existing development or existing use phases.

The District JURMP has been developed to assist the District in identifying causes or contributions to water quality impacts, tracking urban runoff related activities, and to implement to the maximum extent practicable (MEP) BMPs to reduce or eliminate pollutants from reaching receiving waters within the District's jurisdiction. The JURMP was designed to be a comprehensive management program focusing several individual elements on achieving similar outcomes and objectives. The District's JURMP serves as an informational document that provides an overall account of the program to be conducted by the District during the five-year life of the Municipal Stormwater Permit.

Port of San Diego Jurisdictional Standard Urban Stormwater Mitigation Planning Document. One component of the District's JURMP is to prepare and implement a Jurisdictional Standard Urban Stormwater Mitigation Plan (District SUSMP). The District SUSMP has been developed to address post-construction urban runoff pollution from new development and redevelopment projects that fall under "priority development project" categories. The goal of the District SUSMP is to develop and implement practicable policies to ensure to the maximum extent practicable that development does not increase pollutant loads from a project site and considers urban runoff flow rates, velocities and durations. This goal may be achieved through site-specific controls and/or drainage area-based or shared treatment controls.

The District SUSMP was developed to meet the requirements of the Countywide Model SUSMP, which was collectively developed by the Copermittees and approved by the San Diego Water Board on January 2, 2009. Under the District SUSMP, the District will approve a project's SUSMP plan(s) as part of the development plan approval process for discretionary projects, as well as those projects subject to a ministerial permit. To allow flexibility in meeting the District SUSMP design standards, treatment control BMPs may be located on or off the site, used singly or in combination, or shared by multiple developments, provided certain conditions are met.

San Diego Regional Water Quality Control Board Waste Discharge Requirement (WDR) 98-21. Following the construction of the sand cap under the existing Convair Lagoon Alternative site, the San Diego Water Board issued *WDR 98-21*, Closure and Post-Closure maintenance of the Convair Lagoon Sand Cap, which regulates the sand cap and associated monitoring, maintenance, and, repairs. The WDR states that the action level to trigger repair and or investigation of the cap or cleaning of the storm water conveyance system is 4.6 mg/kg dry weight of PCB contaminates in the sediments. *WDR 98-21* also provides a list of water quality objectives that apply to the water within Convair Lagoon. Some objectives provided are for dissolved oxygen, pH, oil and grease, suspended sediment load/discharge rate, turbidity, and toxicity.

5.10.9.3 Methodology

To evaluate water quality impacts related to implementation of the Convair Lagoon Alternative, Ninyo and Moore evaluated the overall water quality conditions at the site, identified potential significant impacts to water quality from the alternative, described potential mitigation measures, and identified constraints that may potentially affect the alternative (e.g., permitting, dredge material effluent quality). As part of this process, Ninyo and Moore reviewed physical setting information (e.g., topographic, geologic maps, groundwater data) pertaining to the Convair Lagoon area; reviewed readily available maps, reports, and other water quality documents pertaining to the area, including, but not limited to, clean up and abatement orders (CAOs), WDRs, and technical reports prepared by others; performed a site reconnaissance; and, prepared a technical report presenting a summary of findings and conclusions found in Appendix O of this EIR.

5.10.9.4 Thresholds of Significance

Threshold 5.10.9.1: Water Quality. Based on Appendix G of the CEQA guidelines, the Convair Lagoon Alternative would have a significant impact if it would violate any water quality standard, waste discharge requirements or otherwise substantially degrade water quality.

Threshold 5.10.9.2: Groundwater Supply. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would have a significant impact if it would substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.

Threshold 5.10.9.3: Drainage Pattern Alteration. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would have a significant impact if it would substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in: 1) substantial erosion or siltation on or off site, 2) increase the amount of surface runoff in a manner which would result in flooding on or off site, or 3) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

Threshold 5.10.9.4: Flooding. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would have a significant impact if it would place housing or structures within a 100-year floodplain or expose people or structures to a significant risk of loss, injury or death from flooding due to failure of a dam or levee or inundation by a seiche, tsunami or mudflow.

5.10.9.5 Impacts and Mitigation Measures

Less Than Significant Impacts

Threshold 5.10.9.2: Groundwater Supply. The Convair Lagoon Alternative site is located within the Mission Valley Groundwater Basin. Groundwater in the area of the Convair Lagoon Alternative site has been accepted from municipal supply and does not currently have existing or potential beneficial uses. Additionally, the Convair Lagoon Alternative does not propose the use of local groundwater supplies or the construction of groundwater wells. Therefore, implementation of the Convair Lagoon Alternative would not result in a substantial depletion of groundwater supplies. Upon completion of construction, the site would be paved with asphalt and drainage conditions would remain similar to existing conditions, with runoff discharged to the Bay. Therefore, implementation of the Convair Lagoon Alternative would not interfere with groundwater recharge in a manner that would result in a net deficit in aquifer volume or the lowering of the local groundwater table. Groundwater supply impacts from dredging and dewatering construction activities are addressed in Section 4.2, Water Quality, of this EIR.

Threshold 5.10.9.3: Drainage Pattern Alteration. Implementation of the Convair Lagoon Alternative would result in the conversion of approximately 10-acres of intertidal and submerged lagoon areas to upland areas, which would alter the drainage patterns of the site. However, this alternative includes paving the upland surface with asphalt concrete, which would reduce the potential for increased erosion or siltation to occur on site to a level below significance. The addition of the paved land area would increase the amount of surface run-off generated at the site. However, the Convair Lagoon Alternative would be required to comply with the Construction General Permit (CGP). The CGP requires the preparation of a SWPPP prior to commencement of construction. As defined within the CGP, SWPPP requirements serve to control construction-related activities such that erosion, sedimentation, material handling, and other construction-related activities are properly undertaken to protect water quality. This requirement is referenced in the Construction Component of the District's JURMP. The Convair Lagoon Alternative would implement a SWPPP and dust-minimizing BMPs during construction.

Because the Convair Lagoon Alternative is within the jurisdiction of the District, the alternative must comply with JURMP requirements. One component of the JURMP is to prepare and implement a project specific Urban Stormwater Mitigation Plan (USMP). The Convair Lagoon Alternative would qualify as a priority project under SUSMP guidelines because it would create a new paved surface that is greater than 5,000 square feet. Accordingly, the alternative would be required to submit a site-specific USMP. The site-specific USMP would be prepared by the project applicant, prior to approval of the proposed alternative, which would require review and approval by the District. In general, the USMP describes the process used to identify pollutants of concern, conditions of concern, and BMPs to control/reduce runoff volume and its associated pollutants. BMP maintenance requirements are also addressed to ensure consistent pollution prevention performance. Compliance with these regulations would reduce impacts related to an alteration of drainage patterns and increase in run-off to a level below significance. Information related to increased turbidity from sediment disturbance during construction is discussed below under Threshold 5.10.9.1, Water Quality Standards and Requirements.

Upon completion of the Convair Lagoon Alternative construction, the site would be paved with asphalt and drainage characteristics would remain similar to existing conditions in that runoff would be discharged directly to the Bay. The Convair Lagoon Alternative would result in the conversion of approximately 10 acres of intertidal and submerged lagoon areas into upland areas, which would alter the drainage patterns of the site. However, this alternative would be designed with drainage features such as drainage slopes, swales, storm water conveyance systems or other techniques to lessen drainage impacts to reflect natural conditions. In addition, both site pavement and implementation of this alternative's SWPPP would reduce the potential for topsoil or erosion loss. Therefore, operation of the Convair Lagoon Alternative would not result in an alteration of drainage pattern that would increase the amount of surface runoff in a manner which would result in flooding on or off the site. Compliance with the GCP, SWPPP, JURMP, and USMP would further reduce impacts related to drainage pattern erosion and siltation. Therefore impacts related to drainage pattern alteration would be less than significant. Drainage pattern impacts from dredging and dewatering construction activities are addressed in Section 4.2, Water Quality, of this EIR.

Threshold 5.10.9.4: Flooding. The Convair Lagoon site is currently located within a 100-year floodplain. Implementation of the Convair Lagoon Alternative would convert the water portions of the site to land. However, the Convair Lagoon Alternative does not include the construction of any new buildings or structures that would involve human habitation or occupancy. Therefore, implementation of this alternative would not expose people or structures to a significant risk of loss, injury or death from flooding due to failure of a dam or levee or inundation by a seiche, tsunami or mudflow. Therefore the flooding impact would not be significant. Flooding impacts from dredging and dewatering construction activities are addressed in Section 4.2, Water Quality, of this EIR.

Potentially Significant Impacts

Threshold 5.10.9.1: Water Quality. Implementation of the Convair Lagoon Alternative has the potential to impact water quality during construction and post-construction operation, as discussed below.

A sand cap has been installed in Convair Lagoon to isolate existing PCB contamination sediments. Subsequent to installation of the sand cap, monitoring has been conducted that has discovered PCB contamination above the cap, presumably coming from the 60-inch storm drain. In response to this discovery, the San Diego Water Board issued CAO R9-2004-0258, as amended, which addresses the cleanup and abatement of wastes discharged to land at the former TDY site. According to the CAO, significant wastes discharged to soil and groundwater at the site must be identified and cleaned up, and the discharge of any wastes to Convair Lagoon and San Diego Bay must be abated. A subsequent enforcement order will be necessary to assess and cleanup wastes discharged from landside sources to the marine sediments in Convair Lagoon and San Diego Bay. The CAO states that soil and groundwater must be cleaned up and waste discharges abated prior to conducting remedial actions in Convair Lagoon and San Diego Bay to prevent potential recontamination of the marine sediments in the bay. Therefore, the Convair Lagoon Alternative would commence construction once the PCB source is eliminated.

Construction Phase 1, Site Preparation. Phase 1 construction activities would include the demolition and removal of the existing concrete pier, riprap, concrete mattress energy dissipaters, and the abandoned seaplane marine ramp; in addition to the excavation of existing sediment in the area proposed for the containment barrier.

Demolition debris from demolition activities would be removed from waters daily and stockpiled in the adjacent rental car lot until reuse within the site. During this process, sediments may be disturbed by the removal of submerged or partially submerged structures. Sediments may also be disturbed during the placement of debris as fill material during a later phase. A disturbance in sediment would increase water turbidity on the site, which would impact water quality. This is considered a significant impact.

Potentially significant impacts to water quality from excavation operations include spills or leaks of fuels, oils, or other hazardous fluids into bay waters from construction equipment, resulting in water contamination; and spillage of excavated sediment during loading or unloading, resulting in increased water turbidity. This would result in a significant impact. Additionally, existing PCB contamination has been detected on the surface of the existing Convair Lagoon sand cap. Excavation operations during Phase 1 construction for the Convair Lagoon Alternative could result in the disturbance of these existing on-site contaminated sediments. A disturbance in these sediments would result in contaminated sediments being re-suspended within the water column and possibly transported off site by waves, currents or tides. The re-suspension of contaminated sediments into the water column would result in a significant impact to water quality. Therefore, excavation operations during Phase 1 of construction would result in a significant impact to water quality.

Construction Phase 2, Containment Barrier Construction. Phase 2 construction activities would involve the installation of a rock jetty containment barrier. During rock placement activities for the containment barrier, existing sediment on site would be disturbed, which could result in an increase in contaminated suspended sediments, decrease in dissolved oxygen, increase in turbidity and change in water pH. This would result in a significant water quality impact.

Construction Phase 3, Storm Drain Outlet Extension. Phase 3 of construction activities would involve the extension of the existing storm drains and the construction of associated energy dissipaters. The extension of storm drains and energy dissipaters would require the installation of rip-rap. The placement of rock during this phase of construction would disturb the existing on-site sediments, which could result in an increase in contaminated suspended sediments, decrease in dissolved oxygen, increased turbidity and changes in water pH. This would result in a significant water quality impact.

Construction Phase 4, Sediment Transport and Placement. Phase 4 of construction would involve the transport and placement of approximately 121,890 cy of contaminated marine sediment dredged from the Shipyard Sediment Site Project to the Convair Lagoon Alternative site. Impacts to water quality could occur as a result of overfilling of the crane bucket during placement of the contaminated sediment into the Convair Lagoon site, which could result in spillage of sediments into the water column while the bucket is transporting sediments between the barge and the containment barrier area. Spillage of dredged sediment into the bay would result in an increase in suspended contaminated sediments, decreased dissolved oxygen, increased turbidity, and changes in water pH. Placed sediment within the containment barrier also has the potential to migrate outside of the containment barrier while they are suspended in the water column. This would result in a significant water quality impact.

During placement of dredged materials, a breach in the contaminant barrier could also occur. However, the containment barrier would be designed in accordance with the specifications provided in the Naval Facilities Engineering Command, DM-7.2, Foundations and Earth Structures, dated September 1986, and constructed to hold the anticipated volume and weight of the dredged sediments and equipped with berms around the perimeter to minimize the potential for water to enter the bay should a breach occur. Additionally, the containment barrier would be marked with dock blocks, or a similar marker, to identify areas where construction activities cannot occur due to proximity with the containment barrier. These markers would assist in preventing any accidental breaches of the contaminant barrier from construction activities. Due to design and anticipated construction methods, no water quality impacts are anticipated from a potential breach in the containment barrier. Refer to Section 5.10.6, Geology and Soils, for information related to potential breaches from seismic activity.

Construction Phase 5, Containment Cap Installation. Phase 5 of construction would involve the installation of a one-foot thick sand layer and asphalt containment cap. Grading and placement of the sand cap could result in increased sediments flowing to the bay from wind or water erosion. However, compliance with the GCP, SWPPP, JURMP, and USMP would reduce water quality impacts related to this construction. Impacts would be less than significant.

Post-Construction Operation. Upon completion of construction, sediments within the Convair Lagoon have the potential to migrate into the bay through tidal fluctuations. However, the potential for this migration is low because sediments would no longer be suspended in the water column and the filter associated with the containment barrier would mitigate the migration of fill particles into the bay. Due to the presence of the contaminant barrier, post-construction operation of the Convair Lagoon Alternative would result in less than significant impacts to water quality.

With respect to surface water quality runoff, this alternative would result in the conversion of approximately 10 acres of intertidal and submerged lagoon areas into paved upland areas. However, the addition of paved land would not result in a significant increase in polluted run-off from the site because the completed site would be designed to properly drain and filter surface water runoff pollutants through the use of drainage slopes, swales, storm water conveyance systems, or other methods through the implementation of the SWPPP. Therefore, impacts to surface water quality from the alternative would be less than significant. Water Quality impacts from dredging and dewatering construction activities are addressed in Section 4.2, Water Quality, of this EIR.

Mitigation Measures

In addition to the following mitigation measures, the Convair Lagoon Alternative is required to implement mitigation measures 4.2.1 through 4.2.13, listed in the Shipyard Sediment Site EIR, Section 4.2, Water Quality. Under this alternative, Mitigation Measures 4.2.1 through 4.2.9 would apply to all construction activities associated with the Convair Lagoon Alternative and would not be limited to dredging and dewatering activities at the Shipyard Sediment Project Site.

Threshold 5.10.9.1: Water Quality, All Phases Construction

Mitigation Measure 5.10.9.1: **Construction Equipment Spills/Leaks.** ~~The following BMPs shall be implemented to minimize the potential for accidental spills/leaks to occur and to minimize fluids entering the bay:~~
~~Oils and fuels shall be housed in secondary containment structures.~~

~~Spill cleanup kits shall be available at various locations on site. Personnel shall be trained on the locations of the kits and their proper use and disposal.~~

~~Personnel shall be trained on the potential hazards from accidental spills and leaks to increase awareness of the materials being handled and the potential impacts.~~

~~Routine maintenance and inspections of equipment containing oil, fuel, or other hazardous fluids shall be~~

~~performed to identify worn or faulty parts and needed repairs.~~

Prior to construction, t~~T~~he ~~contractor/operator for~~ construction contractor ~~of the Convair Lagoon Alternative~~ shall create and implement a Spill Prevention, Control and Countermeasure Plan, which shall apply to oil and hazardous material spills into waters of the U.S., in quantities that may be harmful. The contractor/operator shall submit the Spill Prevention, Control and Countermeasure Plan to the San Diego Water Board for review. The Spill Prevention, Control and Countermeasure Plan shall identify the contractor's responsible parties, precautionary measures to reduce the likelihood of spills, and the spill response and reporting procedures in case a spill occurs, in compliance with the requirements of the Clean Water Act.

~~During operations, personnel shall perform visual monitoring of equipment for spills or leaks.~~ If a spill/leak is observed, the equipment shall be immediately shut down, the source of the spill/leak shall be identified, and the spill/leak shall be contained, in accordance with the measures identified in the Spill Prevention, Control and Countermeasure Plan.

In the event of a spill of materials from a barge, an oil boom shall be deployed in the vicinity of the barge to facilitate the containment of the spill/leaks. An oil boom shall be located on site during all construction activities so that it is readily available in the event of a spill. Oil retrieval and disposal shall be conducted in accordance with the alternative's Spill Prevention, Control and Countermeasure Plan. The San Diego Water Board shall be responsible for ensuring adherence to the requirements of this measure.

Mitigation Measure 5.10.9.2: **Water Quality Monitoring.** Water quality monitoring shall be performed during in-water activities (e.g., demolition, dredging, rock placement, dredge placement) to obtain real-time data so that potential impacts to water quality can be quickly detected and activities modified to avoid impairing or degrading water quality. A system for monitoring of turbidity in the water column in the vicinity of dredging and excavation activities shall be used to assist the operator in adjusting or modifying operations to reduce temporary water quality impacts. Prior to commencement of demolition activities on the project site, the construction contractor shall prepare ~~and implement~~ a water quality monitoring plan which shall include the evaluation of turbidity levels. The construction contractor shall submit the water quality monitoring plan to the San Diego Water Board for review and approval. Upon approval by the San Diego Water Board, the construction contractor shall implement the water quality monitoring plan. Monitoring shall be performed in at least three locations. The monitoring stations shall be located: 1) approximately 500 feet upstream of the work area, 2) immediately inside the work area, 3) approximately 250 feet downstream from the work area. The station immediately inside the work area shall be visually monitored. If a turbidity plume is observed, then monitoring of the 250-foot and 500-foot stations shall begin. Samples collected at the 250-foot station are intended to be a screening tool to warn of potential impacts that may reach the 500-foot station. If the water quality samples downstream from the work area are 20 percent greater than the upstream samples, then work shall be halted, the cause of the exceedance shall be identified and additional BMPs, depending on the particular activity (demolition, rock placement or sediment placement) shall be implemented and monitored for effectiveness. Additional BMPs may require modifications to the activity (duration, frequency, location, equipment, and sequencing). The San Diego Water Board shall be responsible for ensuring adherence to the requirements of this measure.

Threshold 5.10.9.1: Water Quality, Phase 1 Construction

Mitigation Measure 5.10.9.3: **Low Tide Demolition.** Demolition activities for submerged structures during Phase 1 of construction shall be scheduled during low tides to expose as much of the submerged structures as possible and to reduce disturbance of sediments or a silt curtain shall be used to control turbidity. The San Diego Water Board shall be responsible for ensuring adherence to the requirements of this measure.

Threshold 5.10.9.1: Water Quality, Phase 4 Construction

Mitigation Measure 5.10.9.4: **Dredging Equipment Selection.** The dredge bucket shall be enclosed to reduce re-suspension caused by dredge spoils falling back into the bay. The San Diego Water Board shall be responsible for ensuring adherence to the requirements of this measure.

Mitigation Measure 5.10.9.5: **Dredging Placement BMPs.** The following BMPs shall be implemented to minimize the re-suspension or spillage of sediments during the placement of dredged materials:

~~Dredged soils shall not be stockpiled on the floor of the San Diego Bay;~~

~~The dredge bucket shall be fully closed before withdrawing from loading activities;~~

~~The dredge bucket and barge shall not be overfilled. This shall occur by visual monitoring and visual markings on the barge to indicate limits of fill;~~

~~A spill plate shall be placed between the barge and the landside to prevent spillage from falling into the bay water;~~

1. A weir shall be constructed on or near the containment jetty to provide a method to release site water displaced during the placement of fill in CDF. The weir may consist of a low crest in the containment jetty or a pipe in the structural fill of the barrier. The weir outflow will be monitored as described in mitigation measure 5.10.9.2. If an exceedance occurs, a filter fabric barrier or floating silt curtain shall be installed across or just outside of the weir outflow to minimize the potential for suspended sediments to enter the water outside of the CDF.
2. Multiple bites with the dredge bucket shall be prohibited;
3. Dredged material shall be placed carefully and the bucket drop height shall be limited to minimize splashing or sloshing, based on crane operator observations and water quality turbidity;
4. Barge movement and speed shall be in conformance with safe practices.
5. The San Diego Water Board shall be responsible for ensuring adherence to the requirements of this measure.

Cumulative Impacts

The geographic scope of the cumulative impact analysis for hydrology and water quality varies depending on the type of resource that could be impacted. The geographic scope for each of the four hydrology and water quality topic areas is described below as part of the cumulative impact discussion for each of the topics.

Threshold 5.10.9.1: Water Quality Standards and Requirements. The geographic context for the analysis of cumulative impacts relative to water quality standards and requirements encompasses the Pueblo San Diego Hydrologic Unit, the watershed in which the Convair Lagoon Alternative site is located; and the San Diego Bay. Construction and development associated with cumulative projects, such as those identified in Table 5-8, Cumulative Projects in the Vicinity of Convair Lagoon, would contribute both point and non-point source pollutants to downstream receiving waters that have the potential to violate water quality standards. However, development and construction proposed under these cumulative projects would be subject to regulations that require compliance with water quality standards, including the CWA, Porter-Cologne Water Quality Control Act, NPDES, applicable basin plans, and local regulations. Refer to the Regulatory Setting section above for additional information on federal, state and local water quality regulations. Cumulative project compliance with applicable regulations would ensure that a significant cumulative impact would not occur. In addition, the implementation of Mitigation Measures 5.10.9.1 through 5.10.9.5, would reduce the direct impacts of the Convair Lagoon Alternative to less than significant. Therefore, the Convair Lagoon Alternative would result in a less than significant cumulative impact related to water quality standards and requirements.

Threshold 5.10.9.2: Groundwater Supplies and Recharge. Groundwater basins typically serve the local area and, therefore, any cumulative impacts would pertain to the local groundwater basin within which the alternative is located. Therefore, the geographic context for the analysis of cumulative impacts relative to groundwater supplies and recharge encompasses the Mission Valley Groundwater Basin. Generally, the cumulative area of analysis is urban in nature. It is unlikely cumulative projects would use groundwater sources for water supply, because the City of San Diego and surrounding areas distribute imported surface water in the cumulative area. Additionally, although cumulative projects may increase impervious surfaces over existing conditions, these projects would be required to adhere to existing regulations that reduce impacts to groundwater resources, including the Porter-Cologne Water Quality Control Act, which requires region-specific Basin Plans and the San Diego Basin Plan, which sets water quality objectives for the San Diego Basin. Refer to the Regulatory Setting section above for additional information on federal and state groundwater regulations. Cumulative project compliance would ensure that a significant cumulative impact would not occur. Therefore, the Convair Lagoon Alternative would result in a less than significant cumulative impact related to groundwater supplies and recharge.

Threshold 5.10.9.3: Drainage Pattern Alteration. The geographic context for the analysis of alteration of drainage patterns encompasses the Pueblo San Diego Hydrologic Unit, the watershed in which the Convair Lagoon Alternative site is located. Land disturbance and development activities are expected to continue within this watershed which could impact drainage patterns and contribute to erosion. However, cumulative projects would be required to comply with existing regulations relating to surface water runoff and flooding. Refer to the Regulatory Setting section above for additional information on federal, state and local regulations pertaining to drainage alteration. Cumulative project compliance with these regulations would ensure that a significant cumulative impact would not occur. Therefore, the Convair Lagoon Alternative would result in a less than significant cumulative impact related to the regional alteration of drainage patterns.

Threshold 5.10.9.4: Flooding. The geographic context for the analysis of flooding includes the Pueblo San Diego Hydrologic Unit. Cumulative projects may result in development that would convert permeable surfaces to impermeable surfaces, such as through the construction of buildings, parking lots, and roadways. New development proposed under cumulative projects would have the potential to alter existing drainage patterns, increase the amount of runoff and potentially increase flooding in the area. Additionally, cumulative projects would potentially place housing or structures within a 100-year flood hazard area. However, cumulative projects in California would be required to conform to applicable regulations, such as National Flood Insurance Act, National Flood Insurance Reform Act, NPDES and Cobey-Alquist Floodplain Management Act. Refer to the Regulatory Setting section above for additional information on federal and state regulations pertaining to flooding. Cumulative project compliance with these regulations would ensure that a significant cumulative impact would not occur. Therefore, the Convair Lagoon Alternative would result in a less than significant cumulative impact related to impeding or redirecting flood flows.

Level of Significance After Mitigation

Upon implementation of mitigation measures 5.10.9.1 through 5.10.9.5, in addition to mitigation measures 4.2.1 through 4.2.13, listed in the Shipyard Sediment Site EIR, Section 4.2, Water Quality, all hydrology and water quality impacts would be reduced to a less than significant level.

Significant Unavoidable Adverse Impacts

No significant and unavoidable adverse hydrology or water quality impacts would occur from implementation of the Convair Lagoon Alternative.

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Figure 5-13: Site Topography

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5.10.10 Land and Water Use Compatibility

This section describes potential impacts to land and water use compatibility resulting from implementation of the Convair Lagoon Alternative. Information in this section is based on a review and analysis of the San Diego Unified Port District (District) Port Master Plan (PMP), the California Coastal Act, and other documents, as cited throughout the section.

5.10.10.1 Existing Environmental Setting

The following discussion identifies existing and planned on site and surrounding land and water uses for the Convair Lagoon Alternative.

On-site Land and Water Uses

The Convair Lagoon Alternative site, including potential staging areas, is approximately 15.4 acres in size and consists of open water, submerged facilities and land. Land facilities on the Convair Lagoon Alternative site are located along the periphery of the site, with the exception of the southern boundary of the site which is San Diego Bay (see Figure 5-4). Land facilities include an asphalt paved area along the northern boundary of the site, parallel to North Harbor Drive; a concrete seawall or rip-rap located along the north, east and west shorelines; and an abandoned concrete sea plane marine ramp located along the southwesterly interface between the land and water. The staging area for the project, located in the western and northwestern part of the site, is a large rental car parking lot.

Submerged facilities located on the Convair Lagoon Alternative site are illustrated in Figure 5-4. The submerged area of the site consists of an approximate seven-acre sand cap that was designed to isolate sediment contamination associated with former Teledyne Ryan Aeronautical operations. In addition to the sand cap, submerged facilities on the site include a sub-surface rock berm and multiple submerged storm drains. The sub-surface rock berm transects the site from the northwest corner to the southeast corner in an “L” shape to contain the existing sand cap. On the northern shoreline, a 60-inch diameter storm drain, a 54-inch diameter storm drain, and two 30-inch diameter storm drains outlet into the lagoon. The two 30-inch diameter storm drains are abandoned in place and are no longer active.

The Convair Lagoon Alternative site is located within Planning District 2 (Lindbergh Field/Harbor Island) of the 2010 PMP. Planning District 2 is one of the nine planning districts that are covered by the PMP and encompasses approximately 996 acres, which consists of about 816 acres of tidelands and 180 acres of submerged tidelands. Within Planning District 2, the site is located in Planning Subarea 24 (East Basin Industrial). Planning Subarea 24 encompasses the entire Convair Lagoon Alternative site. The PMP recommends Planning Subarea 24 for eventual redevelopment into a light, marine-related industrial/business park land use that would allow such activities as scientific laboratories, office space, marine-oriented businesses and light manufacturing plants, with some ancillary storage and warehousing.

Within the PMP, approximately 5.4 acres of the Convair Lagoon Alternative site is designated for Harbor Services (both land and water) and 5.3 acres of the westerly portion of the site is designated for Specialized Berthing (water) (see Figure 5-5). A small portion of the site (1.3 acres), along the southeastern boundary, is designated for Boat Navigation Corridor (water). The western and northwestern portions of the site (3.4 acres), including the staging area, is designated as Industrial Business Park (land).

Surrounding Water and Land Uses

Areas surrounding the Convair Lagoon Alternative site are illustrated in Figure 5-3. Existing and planned water and land uses in the area surrounding the Convair Lagoon Alternative site are discussed below.

Land Uses to the West. Existing land uses adjacent and to the west of the site include a rental car parking lot. The PMP designates land to the west of the site for "Industrial Business Park." This area is recommended for eventual redevelopment into a light, marine-related industrial/business park which could include such uses as scientific laboratories, office space, marine-oriented businesses and light manufacturing plants, with some ancillary storage and warehousing.

Land Uses to the North. Existing land uses adjacent to the northern boundary of the Convair Lagoon Alternative site include a greenway and bicycle path that extend along North Harbor Drive. Land to the north of the Convair Lagoon Alternative site is located within Planning Subarea 24 of the 2010 PMP. Further north, across Harbor Drive, is the San Diego International Airport (SDIA). The SDIA is located partially on State tidelines leased from the District, but is operated, maintained and under the jurisdiction of the San Diego County Regional Airport Authority. The SDIA is located in Planning Subarea 25 of Planning District 2 within the PMP.

Land Uses to the East. The Convair Lagoon Alternative site is bounded to the east by land used for the U.S. Coast Guard Station San Diego. This area of land is under the jurisdiction of the federal government and therefore does not have a PMP land use designation. Activities conducted at the U.S. Coast Guard Station San Diego include maritime law enforcement, illegal immigration enforcement, drug enforcement, and search and rescue and homeland security operations.

Water Uses to the South. Water uses located to the south of the Convair Lagoon Alternative site are within San Diego Bay. This portion of the bay is located within Planning Subarea 24 of the 2010 PMP and is designated as "Boat Navigation Corridor" under the Public Facilities land use category. Existing water uses to the south of the site include

Anchorage A-9. Anchorage A-9 is a nine-acre water area which can accommodate approximately 30 transient water craft using vessels ground tackle.

5.10.10.2 Regulatory Setting

The following discussion describes the adopted plans and policies relevant to the project site and the surrounding area.

San Diego Unified Port District Master Plan (PMP)

The District's PMP provides the official planning policies for the physical development of the tidelands and submerged lands conveyed in trust to the District. Adoption of the PMP occurred in January of 1964, with the most current version dated January 2010, which includes all PMP amendments through 2009. The land use designations are illustrated graphically on maps with descriptions of the land uses and related policies provided in the PMP text. Eleven maps are included in the PMP, two of which illustrate bay-wide land uses and circulation and navigation systems. The remaining nine maps are identified as Precise Plans that pertain to Planning Districts within the bay and illustrate land and water use designations for each Planning District. Specific planning policies are provided in the PMP for each of the nine Planning Districts. The Convair Lagoon Alternative site is located in Planning District 2 (Lindbergh Field/Harbor Island). Planning District 2 is divided into nine subareas, with the Convair Lagoon Alternative located within Subarea 24 (East Basin Industrial).

PMP Planning District 2 (Lindbergh Field/Harbor Island)

The following discussion provides an explanation of each applicable on-site land and water use within Planning District 2 (Lindbergh Field/Harbor Island), Planning Subarea 24, as shown in Figure 5-5.

Industrial Uses. Industrial land and water uses within Planning District 2, Planning Subarea 24 include Aviation Related Industrial, Industrial Business Park and Specialized Berthing. Industrial land and water use objectives of the PMP state that each industrial area on the tidelands should:

8. Be located in convenient proximity to other industrial areas and to living areas from which there are interconnecting transit and thoroughfare routes.
9. Provide, under single ownership, a variety of reasonably level, well-drained sites on land that is either vacant or on developed lands that can be phased out economically for redevelopment.
10. Provide sites that are economical to develop and adequate for main buildings, accessory storage, off-street loading, off-street parking, and buffer strips.

11. Be designed to meet performance standards adequate to avoid nuisances, thereby insuring compatibility with surrounding uses.
12. Be limited to industrial uses which have a definite need for the availability of utilities, direct access to railroads and major thoroughfares, and the proximity of either airport or water frontage.
13. Provide substantial benefits to both local economic needs and to the regional hinterland.

Industrial Business Park. The Industrial Business Park use designation is a land category that permits a wide range of industrial and business uses that emphasize clustering of buildings, extensive landscaping, landscaping, and shared open space. The Industrial Business Park land use is reserved for the types of industrial activities associated with the manufacture, assemblage, processing, testing, servicing, repair, storage or distribution of products; wholesale sales; retail sales that are incidental to permitted uses; transportation and communication uses; parking; industrial, construction, government and business services; and research and development.

Specialized Berthing. The Specialized Berthing use designation is a water category devoted to marine commercial and industrial uses including ship building and repair, water taxi, excursion and ferry craft, commercial fishing boat berthing as a priority use, cruise ship berthing, maritime museum exhibits and historic craft replicas, water intake and discharge, industrial and commercial launching, vessel loading and unloading, marine contractors, rigged vessels, barges, tugs/tow boats, breakwater, launch ramps and lifts, seawall margin wharves, and any other facility supporting the marine craft engaged in commercial and industrial uses. Typical specialized berthing uses include dry docks, graving docks, heavy lift equipment, barge cranes, mooring dolphins, pile supported platforms, steel hatch decking, margin wharves, and ship berths for a variety of cargo, such as roll on/roll off containers, bulk loading, and break bulk.

Public Facilities. Public facilities within Planning District 2, Planning Subarea 24 include Harbor Services, Boat Navigation Corridors, and Boat Anchorage. The Public Facilities objectives of the PMP state that each public facility area on tidelands should:

14. Be located so as to not adversely affect adjacent properties and be designed so that the architectural theme is in harmony with the design theme of the Planning District.
15. Be provided for in advance of need.
16. Provide efficient and economical locations for emergency services along with up-to-date equipment and well trained personnel adequate to provide protection of life and property.

17. Contribute to a coordinated system of functional streets necessary for the safe, efficient and economical movement of people and goods within and through the tidelands.

Harbor Services. The Harbor Services use designation is both a land and water category that identifies land and water areas devoted to maritime services and harbor regulatory activities of the District, including remediation and monitoring.

Boat Navigation Corridor. The Boat Navigation Corridor use designation is a water category for those water areas delineated by navigational channel markers or by conventional waterborne traffic movements. Boat corridors are designated by their predominant traffic and their general physical characteristics. These channels are usually too shallow and too narrow to accommodate larger ships and serve the navigation system in a manner similar to that provided by streets in a land-based circulation system.

Boat Anchorage. Within Planning District 2, the Boat Anchorage water use designation is reserved for Anchorage A-9, Cruiser Anchorage. Anchorage A-9 is a nine-acre water area which can accommodate approximately 30 transient craft using vessels ground tackle. The anchorage is located south of the U.S. Coast Guard Station San Diego.

California Coastal Act

The California Coastal Act (Public Resources Code Sections 30000 et seq.) was passed by the State Legislature in 1976 and became effective January 1, 1977. The California Coastal Commission (CCC) has the authority to review and approve local government and District plans located within the coastal zone. The entire Convair Lagoon Alternative site, and adjacent area, is located within the coastal zone. The Coastal Act requires cities and counties in areas of the coastal zone to prepare local coastal programs (LCPs) to implement the conservation, development, and regulatory policies of the Coastal Act. The PMP implements the policies of the Coastal Act for property within the District's jurisdiction.

Chapter 8 of the Coastal Act sets forth the policies applicable to ports, including the District. The District has the authority to conduct coastal development permit reviews for projects within its jurisdiction. A proposed project must be consistent with the certified PMP to be issued a permit and may be appealed for CCC review only if uses authorized by the proposed project are specifically listed as appealable in section 30715 of Chapter 8, "Ports." Summaries of Coastal Act policies that are applicable to the Convair Lagoon Alternative are presented in the following section in Table 5-35.

San Diego International Airport Land Use Compatibility Plan

The San Diego County Regional Airport Authority is in the process of updating the Airport Land Use Compatibility Plan (ALUCP) for SDIA. SDIA is the primary commercial airport for the San Diego region. The ALUCP for SDIA plays an important role in ensuring that new development in the vicinity of the airport is compatible and safe, and that SDIA can continue to meet the region's aviation needs. The existing SDIA ALUCP was originally adopted in February 28, 1992 and last amended on October 4, 2004.

ALUCPs are plans that guide property owners and local jurisdictions in determining what types of proposed new land uses are appropriate around airports. They are intended to protect the safety of people, property and aircraft on the ground and in the air in the vicinity of the airport. They also protect airports from encroachment by new incompatible land uses that could restrict their operations. ALUCPs are based on a defined area around an airport known as the Airport Influence Area (AIA). AIAs are established by factors including airport size, operations, configuration, as well as the safety, airspace protection, noise, and overflight impacts on the land surrounding an airport. ALUCPs do not affect existing land uses.

San Diego International Airport Master Plan

According to the Federal Aviation Administration (FAA) Advisory Circular 150/5070-6A, the goal of an airport master plan is "to provide guidelines for future airport development which will satisfy aviation demand in a financially feasible manner, while at the same time resolving the aviation, environmental, and socioeconomic issues existing in the community." The SDIA Master Plan documents the San Diego County Regional Airport Authority's planning process for the 661 acres that comprise SDIA. Adopted by the Authority Board on May 1, 2008, the Airport Master Plan provides guidance for development of the airport to meet continued passenger, cargo and operations growth at SDIA. The Airport Master Plan represents the approved actions to be accomplished for phased development of the airport.

Rivers and Harbors Appropriation Act of 1899

Under section 10 of the Rivers and Harbors Appropriation Act of 1899, the building of any wharfs, piers, jetties, and other structures and excavation or fill within navigable waters requires the approval of the Chief of Engineers of the U.S. Army Corps of Engineers (ACOE). Contaminated sediments associated with dredge or fill projects in navigable waters must be addressed, if appropriate.

5.10.10.3 Methodology

To determine potential water and land use planning impacts from implementation of the Convair Lagoon Alternative, available aerial imagery, the California Coastal Act, and the PMP were reviewed. Relevant goals and policies within these documents were compared for consistency with the proposed features of the Convair Lagoon Alternative. Existing land uses were also evaluated for consistency with the features of the proposed Convair Lagoon Alternative.

The Convair Lagoon Alternative is located on State tidelands, which were conveyed, in trust, to the District to manage for the people of California. Consequently, only the PMP and Coastal Act have jurisdiction over the Convair Lagoon Alternative site. Local City plans and policies and policies of the San Diego County Regional Airport Authority are advisory in nature, and therefore, do not constitute regulations governing use or development within the District's jurisdiction. Accordingly, land and water use compatibility impacts associated with consistency with adopted City and San Diego County Regional Airport Authority plans and policies are not considered in this analysis.

5.10.10.4 Thresholds of Significance

Threshold 5.10.10.1: Physically Divide and Established Community. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant land use compatibility impact if it would physically divide an established community.

Threshold 5.10.10.2: Conflict with Applicable Plans and Policies. Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant land and water use compatibility impact if it would conflict with an adopted policy of the PMP or the California Coastal Act.

Threshold 5.10.10.3: Based on Appendix G of the CEQA Guidelines, the Convair Lagoon Alternative would result in a significant land and water use compatibility impact if it would conflict with any applicable habitat conservation plan or natural community conservation plan.

5.10.10.5 Impacts and Mitigation Measures

Less than Significant Impacts

Threshold 5.10.10.1: Physically Divide an Established Community. The Convair Lagoon Alternative site is located in a developed urban area and is surrounded by industrial and governmental development. No residential development is located adjacent to the site and implementation of the Convair Lagoon Alternative would not create a physical barrier (ex. Highway), that would result in the physical division of an established community. Therefore, the Convair Lagoon Alternative would not physically divide an established neighborhood and no impact would occur.

Threshold 5.10.10.2: Consistency/Conformance with Adopted Plans and Policies and Compatibility with Surrounding Land and Water Uses. The following section evaluates the Convair Lagoon Alternative in terms of consistency with the PMP and the California Coastal Act and compatibility with surrounding land and water uses.

Port Master Plan. Because the Convair Lagoon Alternative involves an amendment to the PMP, consistency with the PMP is evaluated based on the changes proposed by the PMPA, the effect of those changes in relation to the currently approved PMP, and the underlying goals of the PMP.

No existing use designations for land areas on the Convair Lagoon Alternative site would be changed under the proposed PMPA. These areas would remain Industrial Business Park (3.4 acres) and Harbor Services (land) (0.4 acre).

The proposed PMPA would result in changes to the 10 acres of water use designations on the site. Under the proposed PMPA, all existing water areas of the Convair Lagoon Alternative site would change their use designation to Harbor Services (land), as illustrated in Figure 5-6, and be converted to land facilities. The Harbor Services use category in the PMP identifies land and water areas devoted to maritime services and harbor regulatory activities of the District, including remediation and monitoring. As illustrated in Figure 5-5**,** the area within the proposed PMPA boundary is designated as Harbor Services (water), Industrial Specialized Berthing (water), and Boat Navigation Corridor (water) under the current PMP. The proposed water use changes that would occur with approval of the Convair Lagoon Alternative PMPA are summarized in Table 5-34. Minor textual changes to the PMP would also be implemented as part of the PMPA to describe the land uses changes associated with the proposed PMPA.

Table 5-34: Proposed Port Master Plan Amendment Land Use Acreage Changes for the Convair Lagoon Alternative

Land Use Designation	Existing (acres)	Proposed (acres)	Net Change (acres)
Boat Navigation Corridor (water)	0.5	0.0	-0.5
Industrial Specialized Berthing (water)	4.5	0.0	-4.5
Harbor Services (water)	5.0	0.0	-5.0
Harbor Services (land)	0.0	10.0	+10.0

Implementation of the Convair Lagoon Alternative would result in the conversion of five acres of Harbor Service (water) use designation to five acres of Harbor Service (land) use designation. The Harbor Service use definition, for both land and water, is the same and identifies areas devoted to maritime services and harbor regulatory activities of the District, including remediation and monitoring. The existing Convair Lagoon Alternative site contains a seven-acre sand cap for remediation purposes. Implementation of the Convair Lagoon Alternative would continue to use the site for remediation, by placing contaminated dredge from the Shipyard Sediment site into the lagoon and capping it with sand and asphalt. Therefore, the conversion of five acres of Harbor Service (water) use designation to Harbor Service (land) use designation would result in a less than significant impact because the proposed land use designation would be essentially the same as the existing land use designation. No conflict with the PMP would occur as a result of this land use change.

The proposed PMPA would also convert 4.5 acres of Industrial Specialized Berthing (water) use designation to 4.5 acres of Harbor Service (land) use designation. The Convair Lagoon Alternative site is not currently used to conduct any activities typically associated with Industrial Specialized Berthing, such as ship building and repair, water taxi, excursion and ferry craft, commercial fishing boat berthing, and other marine-related uses. It is unlikely to be used for these activities in the future due to the shallow depth of the site, which would preempt the ability to lower the elevation in this water area to accommodate industrial specialized berthing uses. Therefore, the conversion of 4.5 acres of Industrial Specialized Berthing (water) use designation to 4.5 acres of Harbor Service (land) use designation would not be inconsistent with the PMP and would not result in a significant impact.

Within the Convair Lagoon Alternative site, the proposed PMPA would also result in the conversion of 0.5 acres of Boat Navigation Corridor (water) use designation to 0.5 acres Harbor Service (land) use designation. The existing boat navigation corridor on the site is located on the northern periphery of this use area and provides a corridor for small boat traffic traveling between Anchorage A-9 and the main navigation corridor in San Diego Bay, as well as small boat traffic traveling from the East Harbor Island Marina. The loss of 0.5 acres of Boat Navigation Corridor water use from implementation of the Convair Lagoon Alternative on the northern periphery of this corridor would not impact the ability for boats to navigate between the marina, anchorage and the main navigation corridor in San Diego Bay. Therefore, this would not result in an inconsistency with the PMP and a significant impact would not occur.

California Coastal Act. The Convair Lagoon Alternative site is located within the California Coastal Zone and must comply with the California Coastal Act. Table 5-35 identifies Chapter 8, "Port" policies within the California Coastal Act that are applicable to the Convair Lagoon Alternative and provides an analysis of the alternative's consistency with those policies.

Table 5-35: Applicable California Coastal Act Chapter 8 "Ports" Policies and Proposed Project Consistency

Section	California Coastal Act (CCA) Policy	Convair Lagoon Alternative Consistency Evaluation
Article 2 – Policies		
30703	**Protection of commercial fishing harbor space.** The California commercial fishing industry is important to the state of California; therefore, ports shall not eliminate or reduce existing commercial	The Convair Lagoon Alternative would convert 10 acres of water use designation to land use designation within the PMP, requiring a PMPA. The 10 acres of land would remain under District control

Table 5-35: Applicable California Coastal Act Chapter 8 "Ports" Policies and Proposed Project Consistency

Section	California Coastal Act (CCA) Policy	Convair Lagoon Alternative Consistency Evaluation
	fishing harbor space, unless the demand for commercial fishing facilities no longer exists or adequate alternative space has been provided. Proposed recreational boating facilities within port areas shall, to the extent it is feasible to do so, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry.	and would be designated as Harbor Services (land) use. The eastern five-acre portion of the site is currently used for sediment remediation and monitoring, consistent with the existing Harbor Services (water) use designation. Changing the designation to Harbor Services (land) use designation would result in the continued use of this area for remediation, consistent with the proposed designation. It would not eliminate or reduce existing commercial fishing harbor space or interfere with the needs of the commercial fishing industry. The 0.5 acres of Boat Navigation Corridor (water) use on the northern periphery of the PMPA area is not currently used for commercial fishing harbor space. The change in designation of this 0.5 area to Harbor Services (land) use would not interfere with existing commercial fishing harbor space. The existing 4.5-acre Industrial Specialized Berthing (water) use designation would be changed to Harbor Services (land) use designation and would not impact existing commercial fishing facilities because the current use is tidal and intertidal habitat. The PMPA does not propose additional recreational boating facilities that would interfere with the commercial fishing industry. Therefore, the Convair Lagoon Alternative would be consistent with CCA section 30703.
30705	**Diking, filling or dredging water areas.** (a) Water areas may be diked, filled, or dredged when consistent with a certified port master plan only for the following: 1) Such construction, deepening, widening, lengthening, or maintenance of ship channel approaches, ship channels, turning basins, berthing areas, and facilities as are required for the safety and the accommodation of commerce and vessels to be served by port facilities. 2) New or expanded facilities or waterfront land for port-related facilities. 3) New or expanded commercial fishing facilities or recreational boating facilities. 4) Incidental public service purposes, including, but not limited to, burying cables or pipes or inspection of piers and maintenance of existing intake and outfall lines. 5) Mineral extraction, including sand for restoring beaches, except in biologically sensitive areas. 6) Restoration purposes or creation of new habitat areas. 7) Nature study, mariculture, or similar resource-dependent activities. 8) Minor fill for improving shoreline appearance or	(a) The Convair Lagoon Alternative would place dredged sediment from the Shipyard Sediment site into Convair Lagoon in order to meet the project objectives to minimize the short-term loss and result in no long-term loss of use of shipyard and other San Diego Bay-dependent facilities. This alternative is consistent with section 30705 (a) (1) because it proposes dredging of the Shipyard Sediment site and filling of Convair Lagoon in order to allow for the continued use of the berthing area and related facilities at the Shipyard Sediment site, which are dependent upon adequate depth to continue to conduct existing shipyard operations. The filling of Convair Lagoon under this alternative would reduce the logistical difficulties associated with the proposed project by reducing truck traffic associated with sediment transportation and disposal. Therefore, the Convair Lagoon Alternative would be consistent with CCA section 30705 Policy (a) (1). The Convair Lagoon Alternative also includes mitigation for the loss of eel grass, tidal, intertidal and marsh habitat. The mitigation for the loss of these habitats would occur in other parts of San Diego Bay and would be consistent with CCA section 30705 Policy (a) (6). (b) The existing Convair Lagoon Alternative site contains a seven-acre sand cap, which remediates contamination related to former Teledyne Ryan

Table 5-35: Applicable California Coastal Act Chapter 8 "Ports" Policies and Proposed Project Consistency

Section	California Coastal Act (CCA) Policy	Convair Lagoon Alternative Consistency Evaluation
	public access to the water. (b) The design and location of new or expanded facilities shall, to the extent practicable, take advantage of existing water depths, water circulation, siltation patterns, and means available to reduce controllable sedimentation so as to diminish the need for future dredging. (c) Dredging shall be planned, scheduled, and carried out to minimize disruption to fish and bird breeding and migrations, marine habitats, and water circulation. Bottom sediments or sediment elutriate shall be analyzed for toxicants prior to dredging or mining, and where water quality standards are met, dredge spoils may be deposited in open coastal water sites designated to minimize potential adverse impacts on marine organisms, or in confined coastal waters designated as fill sites by the master plan where such spoil can be isolated and contained, or in fill basins on upland sites. Dredge material shall not be transported from coastal waters into estuarine or fresh water areas for disposal. (d) For water areas to be diked, filled, or dredged, the commission shall balance and consider socioeconomic and environmental factors.	Aeronautical operations. The Convair Lagoon Alternative is designed to take advantage of this existing condition by placing additional contaminated dredged sediment on the site, contained by a containment barrier, sand cap and asphalt pavement. The installation of the containment barrier, sand cap and asphalt pavement would reduce on-site sedimentation. Therefore, the Convair Lagoon Alternative would be consistent with CCA section 30705(b). (c) The Convair Lagoon Alternative site is not an estuarine or fresh water area. The alternative would potentially result in disruption to fish and bird breeding and migrations, marine habitats, and water circulation; however, these impacts would be mitigated to a level below significant through implementation of mitigation measures 5.10.4.1 through 5.10.4.4 described in this alternative. In addition, the alternative would potentially result in water quality impacts from re-suspension of contaminated sediments into the water column, a decrease in dissolved oxygen, an increase in turbidity and changes in water pH, resulting in significant impacts to water quality. However, these impacts would be mitigated to a less than significant level through implementation of mitigation measures 5.10.9.1 through 5.10.9.5. Sediments dredged from the Shipyard Sediment site would be placed in Convair Lagoon, which is a confined coastal water area designated for sediment contamination and isolation. Prior to construction of the alternative, any existing, on-site contamination would be resolved to the satisfaction of the San Diego Water Board. Within Subarea 24 of the PMP, the Convair Lagoon Alternative site is designated for sediment remediation and monitoring; therefore, the alternative would place contaminated fill in an appropriate bay location. Therefore, the Convair Lagoon Alternative would be consistent with CCA section 30705 (c). (d) The District's preparation and processing of the draft PMPA for the Convair Lagoon Alternative will consider both socioeconomic and environmental factors. The environmental impacts associated with implementation of the Convair Lagoon Alternative are evaluated in Sections 5.10.3 through 5.10.10, of this analysis. Therefore, the Convair Lagoon Alternative would be consistent with CCA section 30705 (d).
30706	**Fill.** Specifies policies, in addition to the other provisions of Chapter 8, which govern filling seaward of the mean high tide line within the jurisdiction of ports. States the following: (a) The water area to be filled shall be the minimum necessary to achieve the purpose of the fill. (b) The nature, location, and extent of any fill,	(a) The Convair Lagoon Alternative would fill Convair Lagoon with only enough materials to achieve the purpose of the fill, which is to dispose of contaminated dredge from the Shipyard Sediment site in a manner that would not require substantial truck traffic. Therefore, the Convair Lagoon Alternative would be consistent with CCA section 30706 (a). (b) The Convair Lagoon Alternative site was chosen

Table 5-35: Applicable California Coastal Act Chapter 8 "Ports" Policies and Proposed Project Consistency

Section	California Coastal Act (CCA) Policy	Convair Lagoon Alternative Consistency Evaluation
	including the disposal of dredge spoils within an area designated for fill, shall minimize harmful effects to coastal resources, such as water quality, fish or wildlife resources, recreational resources, or sand transport systems, and shall minimize reductions of the volume, surface area, or circulation of water. (c) The fill is constructed in accordance with sound safety standards which will afford reasonable protection to persons and property against the hazards of unstable geologic or soil conditions or of flood or storm waters. (d) The fill is consistent with navigational safety.	for the placement of dredged fill from the Shipyard Sediment project because Convair Lagoon already contains a sand cap that remediates sediment contamination from former Teledyne-Ryan Aeronautical operations. Impacts to water quality from implementation of the Convair Lagoon Alternative would be reduced to a level below significant with implementation of mitigation measures 5.10.9.1 through 5.10.9.5. Impacts to biological resources, including a reduction of San Diego Bay surface water, would be mitigated to a level below significant with implementation of mitigation measures 5.10.4.1 through 5.10.4.4. Implementation of specified mitigation measures would minimize harmful effects to coastal resources and waters. Therefore, the Convair Lagoon Alternative would be consistent with CCA section 30706 (b). (c) The Convair Lagoon Alternative would be consistent with the standards and specifications provided in the Naval Facilities Engineering Command, DM-7.2, Foundations and Earth Structures, dated September 1986. Geologic hazards would be mitigated to a less than significant level with implementation of mitigation measure 5.10.6.1. Therefore, the Convair Lagoon Alternative will afford reasonable protection to persons and property against the hazards of unstable geological or soils conditions or of flood or storm waters. The alternative would be consistent with CCA section 30706 (c). (d) The Convair Lagoon Alternative would result in the filling of a 0.5-acre area of San Diego Bay currently designated as Boat Navigational Corridor, which accommodates small boat traffic traveling between Anchorage A-9 and the main boat channel in San Diego Bay. This 0.5-acre areas would be designated Harbor Services (land) with implementation of the alternative. As discussed above, the loss of 0.5 acres of Boat Navigation Corridor water use as a result of the alternative would not impact the ability for boats to navigate between these two locations. Therefore, the fill would not compromise navigational safety and the Convair Lagoon Alternative would be consistent with CCA section 30706 (d).
30708	**Location, design and construction of port-related developments**. All port-related developments shall be located, designed, and constructed so as to: (a) Minimize substantial adverse environmental impacts. (b) Minimize potential traffic conflicts between vessels. (c) Give highest priority to the use of existing land space within harbors for port purposes, including, but not limited to, navigational facilities, shipping	(a) Chapter 5.10.2, "Environmental Analysis," addresses potential impacts to the environment from the siting, design, and construction of the Convair Lagoon Alternative. For each issue analyzed in Chapter 5.10, potential substantial adverse environmental impacts are identified and mitigation measures are provided to minimize these impacts to the extent feasible. Therefore, the Convair Lagoon Alternative would be consistent with CCA section 30708(a). (b) The Convair Lagoon Alternative would result in the

Table 5-35: Applicable California Coastal Act Chapter 8 "Ports" Policies and Proposed Project Consistency

Section	California Coastal Act (CCA) Policy	Convair Lagoon Alternative Consistency Evaluation
	industries, and necessary support and access facilities. (d) Provide for other beneficial uses consistent with the public trust, including, but not limited to, recreation and wildlife habitat uses, to the extent feasible. (e) Encourage rail service to port areas and multicompany use of facilities.	filling of a 0.5-acre area of San Diego Bay currently designated as Boat Navigational Corridor, which accommodates small boat traffic traveling between Anchorage A-9 and the main boat channel in San Diego Bay. This 0.5-acre areas would be designated Harbor Services (land) with implementation of the alternative. As discussed above, the loss of 0.5 acres of Boat Navigation Corridor water use as a result of the alternative would not impact the ability for boats to navigate between these two locations. Therefore, the project would minimize conflicts between vessels and the Convair Lagoon Alternative would be consistent with CCA section 30708 (b). (c) Implementation of the Convair Lagoon Alternative would result in the conversion of the entire site to an above ground, paved parcel of land with a Harbor Service (land) use designation. The Harbor Service (land) use designation allows areas devoted to maritime services and harbor regulatory activities of the District including remediation and monitoring. As a result of the project, the Convair Lagoon Alternative would provide a new land use area for District to use for port purposes. Therefore, the Convair Lagoon Alternative would be consistent with CCA section 30708(c). (d) The project provides a beneficial use to the public by providing a site to place contaminated dredge materials from the Shipyard Sediment site, thus allowing the shipyard to continue to provide berthing areas and related facilities necessary to maintain existing shipyard operations. The Convair Lagoon Alternative site was chosen for the placement of dredged fill from the Shipyard Sediment project because Convair Lagoon already contains a sand cap that remediates sediment contamination from former Teledyne-Ryan Aeronautical operations. The current use of this site for remediation and monitoring precludes it from uses such as recreation. Impacts to existing wildlife habitat within Convair Lagoon resulting from implementation of this alternative would be mitigated to a level below significant with implementation of mitigation measures 5.10.4.1 through 5.10.4.4, including the creation, protection and/or enhancement of wildlife habitat in other areas of San Diego Bay. Therefore, the Convair Lagoon Alternative would be consistent with CCA section 30708 (d). (e) The project would not utilize rail service or provide development that multiple companies could jointly utilize. Therefore, section 30708 (e) is not applicable to the Convair Lagoon Alternative. No further discussion is required.

Compatibility with Surrounding Land and Water Uses. Land and water use compatibility impacts are based on the compatibility of the Convair Lagoon Alternative with existing and proposed neighboring land uses. Land and water use compatibility is based on a number of factors that relate to the characteristics and activities associated with the proposed Convair Lagoon Alternative and the characteristics and activities of the existing and proposed neighboring land and water uses. These characteristics can be general, such as the type and density of uses, or more specific, including visual design attributes, traffic and pedestrian circulation, and other specific features of the land uses. The visual quality and traffic issues related to this alternative are addressed in Section 5.10.11, Other Environmental Issues, of this analysis. Therefore, this section focuses primarily on existing and proposed land and water use compatibility.

Existing Land Uses. Under the Convair Lagoon Alternative, the 10-acre proposed fill pad area portion of the proposed 15.4-acre project site would be converted from water uses to land uses, as proposed in the PMPA. In other words, the site would be converted from existing submerged land to an above-ground, undeveloped, paved parcel of land. The existing water use areas of the site include 5.0 acres of Harbor Services (water), 4.5 acres of Specialized Berthing (water) and 0.5 acre of Boat Navigation Corridor (water) (see Figure 5-5). These areas total 10 acres in size and would be designated as Harbor Services (land) under the Convair Lagoon Alternative. The land use designations of the remaining 5.4-acre area of the project site located along the northern and western project boundaries would not change, and would remain Industrial Business Park (3.4 acre) and Harbor Services (land) (0.4-acre). An additional 1.6 acres of the site area that is not included in the PMPA located adjacent to the southern part of containment barrier would be submerged under water and would remain 0.8 acres of Boat Navigation Corridor and 0.8 acres of Specialized Berthing.

The site is located in a highly developed urban area, bounded by San Diego Bay to the south, North Harbor Drive and SDIA to the north, the U.S. Coast Guard Station to the east and a rental car parking lot to the west. The conversion of a portion of the site from water to land would be compatible with the area because of the industrial and commercial nature of the surrounding area. A large paved parking lot is located to the west of the site, and implementation of the Convair Lagoon Alternative would result in a similar land use. The conversion of the site would not impact any U.S. Coast Guard or SDIA operations and would also be considered compatible with these surrounding land uses, which include manufacturing, aviation and industrial facilities. Implementation of the Convair Lagoon Alternative would not conflict with the Airport Land Use Compatibility Plan for the San Diego International Airport. Refer to section 4.7.8, Hazards and Hazardous Materials, for additional information regarding this conclusion

San Diego Bay is located to the south of the site. The conversion of the site from water to land would not substantially conflict with the water uses within San Diego Bay because the Convair Lagoon Alternative site is currently used for remediation and monitoring activities and is not used for any recreational, fishing or boating activities. Boat Anchorage A-9 is located south of the Convair Lagoon Alternative site and implementation of the alternative would not result in any water use impacts to this anchorage because upon completion of the alternative, boats would continue to be able to navigate through the area of water south of the site and would continue to be able to utilize Anchorage A-9, as well as the marina facilities found at the Harbor Island East Basin.

Furthermore, implementation of the Convair Lagoon Alternative would continue the existing use of the site as remediation and monitoring, with the only major conversion being the change from water to land. For these reasons, the Convair Lagoon Alternative would be compatible with the surrounding land uses and would not result in a significant land use compatibility impact.

Proposed Land Uses. The Convair Lagoon Alternative site is located within Subarea 24 of Planning District 2 within the 2010 PMP. As discussed above, the 10-acre portion of the proposed fill pad area (see Figure 5-4) would be converted from Harbor Services (water), Specialized Berthing (water) and Boat Navigation Corridor (water) uses to Harbor Services (land) use under the Convair Lagoon Alternative. Land to the north of the site is designated as Harbor Services (land); land to the east of the site is under the jurisdiction of the federal government and does not have a PMP land use designation; land to the west of the site is designated as Industrial Business Park; water to the south of the site is designated as Boat Navigation Corridor.

Within the PMP, Subarea 24 land sites are recommended for eventual redevelopment into a light, marine-related industrial/business park to include such uses as scientific laboratories, office space, marine-oriented businesses and light manufacturing plants, with some ancillary storage and warehousing where necessary to conduct primary industrial activities. The Convair Lagoon Alternative site is designated as Harbor Services which identifies sediment remediation and monitoring as a use allowed within this designation. The conversion of the site from water to land is consistent with this use because the proposed land use is industrial in nature and a paved lot would result in a compatible land use. Furthermore, implementation of the Convair Lagoon Alternative would be consistent with the PMP's intent to use the site for sediment remediation and monitoring. Therefore, the Convair Lagoon Alternative would not result in a significant impact to proposed land uses and the impact would not be significant.

Threshold 5.10.10.3: Conflict with Applicable Habitat Conservation Plan. The Convair Lagoon Alternative site is under the jurisdiction of the District and is not subject to the requirements of any habitat conservation plan. Local biological resource policies and ordinances relevant to the Convair Lagoon Alternative include the Port Master Plan, the Southern California Eelgrass Mitigation Policy and the Magnuson-Stevens Fishery Conservation and Management Act. Refer to Section 5.10.4, Biological Resources, for an analysis of consistency with these policies.

Potentially Significant Impacts

Potential impacts to specific issues such as biological resources and water quality are addressed in Sections 5.10.3 through 5.10.10 of this analysis. Other than the impacts addressed in these other sections of this EIR, the proposed Convair Lagoon Alternative would not result in a significant land and water use compatibility impacts relating to general land use compatibility and plan conformance. Any potentially significant impacts associated with changes to the land use designations within the Convair Lagoon Alternative site would be mitigated with approval of the proposed PMPA.

Mitigation Measures

No additional mitigation would be required because mitigation measures are specified in the corresponding sections for more specific issues listed in Sections 5.10.3 through 5.10.10 and no additional significant impacts associated with general land use compatibility and plan conformance were identified.

Cumulative Impacts

Threshold 5.10.10.1 and Threshold 5.10.10.2: Compatibility with Surrounding Land and Water Uses and Consistency/Conformance with Adopted Plans and Policies. The geographic scope of analysis for cumulative impacts includes lands under the jurisdiction of the District and California Coastal Act, which is also where the Convair Lagoon Alternative site is located. It is anticipated that development of future cumulative projects would undergo CEQA review which would require a consistency analysis with applicable plans and policies and existing and proposed surrounding land and water uses. As required by CEQA, cumulative projects would be consistent with the existing adopted plans and surrounding land uses, or require mitigation measures or design review to ensure consistency, in order for project approvals to occur. Therefore, it is anticipated that cumulative development, in combination with the Convair Lagoon Alternative, would be consistent with applicable plans, policies and surrounding land uses, resulting in a less than significant cumulative impact.

Level of Significance After Mitigation

With implementation of the mitigation measures specified in Sections 5.10.3 through 5.10.10 of this analysis, significant cumulative impacts associated with surrounding land uses and consistency with adopted plans and policies would be reduced to a level below significant.

Significant Unavoidable Adverse Impacts

No significant and unavoidable adverse land use impacts would occur from implementation of the Convair Lagoon Alternative.

5.10.11 Other Environmental Issues

This section contains a brief statement disclosing the reasons that various possible significant effects of the Convair Lagoon Alternative were found not to be significant and, therefore, were not discussed in detail in the analysis. Environmental issue areas found to have potentially significant impacts are addressed in the various subsections of Section 5.10 of this analysis.

5.10.11.1 Effects Found Not to be Significant

The Convair Lagoon Alternative does not have the potential to result in significant impacts to: Aesthetics; Agricultural Resources; Mineral Resources; Noise; Population and Housing; Public Services; Recreation; and Utilities and Service Systems. The exception is Transportation/Traffic which would result in impacts that are the same as those identified for the proposed project and would be mitigated to a less than significant level with the same measures as are identified for the proposed project. The discussion of each topic is addressed by issue questions provided in Appendix G, Environmental Checklist Form, of the CEQA Guidelines.

Aesthetics

Would the Convair Lagoon Alternative have a substantial adverse effect on a scenic vista?

The Convair Lagoon Alternative is located within Planning District 2 Precise Plan, Lindbergh Field/Harbor Island, of the Port Master Plan (PMP). The PMP provides a framework for the consideration of vistas and views that have been recognized as scenic and important to the area and the region. Within the PMP, vista areas are identified as areas that include points of natural visual beauty, photo vantage points, and other panoramas. The intent of the PMP is to guide the arrangement of development on designated vista areas to preserve and enhance such vista points. Major vista areas are indicated by a symbol on the PMP Precise Plan Maps.

The Planning District 2 Precise Plan identifies six different scenic vista areas. All of these areas are located on Harbor Island, with views oriented south towards San Diego Bay. The closest scenic vista to the alternative's site is located to the southwest, along Harbor Island Drive at the most eastern portion of Harbor Island (see Figure 5-14). The viewshed for this vista area extends to the south, in the opposite direction of the Convair Lagoon Alternative site. Although the Convair Lagoon Alternative site is visible to the north of this identified scenic vista, it is not within the identified viewshed, which extends to the south of Harbor Island towards San Diego Bay. Therefore, implementation of the Convair Lagoon Alternative would not impact a scenic vista and no further analysis is required. Additionally, the Convair Lagoon Alternative site is not visible from any designated scenic vista areas located in Planning District 1, Planning District 3 or Planning District 6, due to the orientation of the identified scenic vistas and view obstructions from land facilities, such as the US Coast Guard Station.

Would the Convair Lagoon Alternative substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

The Convair Lagoon site is located along North Harbor Drive, which is not a State designated scenic highway. Additionally, no significant trees, rock outcroppings, historical buildings or other designated scenic resources are located on the alternative's site. Due to the absence of State scenic highways in the site area, no impacts to scenic resources associated with scenic highways would occur. Refer to Section 5.10.5, Cultural Resources, for an evaluation of structures on the alternative's site and their potential to be classified as historic. Therefore a significant impact would not occur.

Would the Convair Lagoon Alternative substantially degrade the existing visual character or quality of the site and its surroundings?

The existing visual character of the Convair Lagoon Alternative site includes a small waterfront embayment and associated land facilities used, in part, for sediment remediation and monitoring. Submerged facilities include a sand cap, a rock berm and multiple storm drains. Land facilities include an asphalt paved dock, an abandoned pier, a concrete seawall, rip-rap, an abandoned sea plane marine ramp, and a chain link fence.

The visual character of areas to the west of the Convair Lagoon Alternative site includes a large rental car parking lot. Beyond the rental car facility, the visual character is an industrial/business park development. The visual character of areas to the north of the site includes a bicycle path, North Harbor Drive and the San Diego International Airport. The visual character of the area to the east of the site includes the United States San Diego Coast Guard Station. The visual character to the south of the site includes San Diego Bay.

During construction, the existing visual character of the site would be altered through the presence of construction equipment such as barges, trucks, cranes and pumps. However, the presence of construction equipment would be temporary and would be removed upon completion of construction. Visual impacts associated with construction would be occur for a period of approximately 15 months and would not permanently degrade the visual character of the site or surrounding area.

Upon completion of construction, the existing visual character of the Convair Lagoon site would be permanently altered. Convair Lagoon Alternative site would be converted from an embayment to an undeveloped, above-ground, paved parcel of land, which would permanently change the visual character of the site. However, this permanent change would not degrade the visual character of the site because the paved site would be consistent with the visual character of land facilities to the north, east and west, which include parking lots, roadways, airport runways and facilities, and a Coast Guard complex. No structures or buildings would be placed on the Convair Lagoon Alternative site upon completion of construction. Upon completion of the containment cap, the elevation of the site would be approximately 10 feet MLLW. The elevation transition between the existing, surrounding ground surface, which is 12 feet MLLW, would be gradual across the site and would be based on surface drainage requirements. Therefore, the finished elevation of the project would not visually impair views from Harbor Drive or adjacent sidewalks. Although implementation of the Convair Lagoon Alternative would permanently alter the visual character of the site, for the reasons described above it would not do so in a way that would degrade the existing visual quality of the site or surrounding area.

Would the Convair Lagoon Alternative create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Construction of the Convair Lagoon Alternative would occur during daytime hours. Nighttime construction and associated lighting would not occur. Upon completion of construction, the Convair Lagoon Alternative site would not contain any new structures or lighting facilities. Therefore, the Convair Lagoon Alternative would not create any new sources of light or glare that would adversely affect day or nighttime views in the area. Therefore, no impact would occur and no further analysis is required.

Agricultural and Forest Resources

Would the Convair Lagoon Alternative convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

The Convair Lagoon site and surrounding area is classified as Urban and Built-up land by the Farmland Mapping and Monitoring Program (FMMP) of the California Department of Conservation (Department of Conservation, 2008). No portion of the site or surrounding area is designated as Prime Farmland, Unique Farmland or Farmland of Statewide Importance by the FMMP. No farmland or row crops exist within the site or in the vicinity of the site. Therefore, construction of the Convair Lagoon Alternative would not convert any agricultural resources to non-agricultural use. Therefore no impact would occur and no further analysis is required.

Would the Convair Lagoon Alternative conflict with existing zoning for agricultural use, or a Williamson Act contract?

The Convair Lagoon Alternative is located within the PMP Planning District 2 Precise Plan. The PMP identifies a variety of land and water uses, such as commercial, industrial, and recreation. The PMP has no agricultural land use designations and Convair Lagoon has a PMP land use designation of Harbor Services, Industrial Specialized Berthing and Boat Navigation Corridor. No agricultural resources exist on the Convair Lagoon Alternative site or within surrounding areas, as discussed above. The alternative would not conflict with existing zoning for agriculture use or a Williamson Act Contract. Therefore, no impact would occur and no further analysis is required.

Would the Convair Lagoon Alternative conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4256), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

The Convair Lagoon Alternative site is located within a highly developed urban area that lacks forest, timberland or timberland production. Under the Port Master Plan, the Convair Lagoon Alternative site is designated Harbor Services, Industrial Specialized Berthing, Industrial Business Park and Boat Navigation Corridor. No forest land, timberland or timber land production exists within the site or the surrounding vicinity. Therefore, the Convair Lagoon Alternative would not conflict with existing on-site or off-site zoning for forestland, timberland or timberland production. Therefore, no impact would occur and no further analysis is required.

Would the Convair Lagoon Alternative result in the loss of forest land or conversion of forest land to non-forest use?

As discussed above, no forest land, timberland or forest resources exist on the Convair Lagoon Alternative site or within the vicinity of the site. Therefore, implementation of the Convair Lagoon Alternative would not result in the loss of forest land or the conversion of forest land to non-forest use. Therefore, no impact would occur and no further analysis is required.

Would the Convair Lagoon Alternative involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No agricultural resources exist on the Convair Lagoon Alternative site or in the surrounding area. Additionally, no forest land resources exist on the Convair Lagoon Alternative site or in the surrounding area. Implementation of the Convair Lagoon Alternative would not involve any changes to the existing environment that would result in the conversion of farmland to non-agricultural use or would result in the conversion of forest land to non-forest use. Therefore, no impact would occur and no further analysis is required.

Mineral Resources

Would the Convair Lagoon Alternative result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No commercial mining operations exist on the Convair Lagoon Alternative site or within San Diego Bay. Additionally, the Port Master Plan has not identified any important mineral resources in the area or designated plans for mineral resource extraction (District, 2010). The Surface Mining and Reclamation Act require the classification of land into Mineral Resource Zones (MRZ), according to the land's known or inferred mineral resource potential. The Convair Lagoon Alternative site and vicinity are located MRZ-1 (SD, 2007). MRZ-1 areas are defined as areas where adequate geologic information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence. The MRZ-1 zone is applied by the California Geological Survey to lands where well developed lines of reasoning, based on economic-geologic principles and adequate data, indicate that the likelihood for occurrence of significant mineral deposits is nil or slight. The Convair Lagoon Alternative site does not have mineral resources and would not result in the loss of availability of a known mineral resource that is of value to the region or residents of the state. Therefore, no impact would occur and no further analysis is required.

Would the Convair Lagoon Alternative result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

As discussed above, no mineral resources exist on the Convair Lagoon Alternative site or surrounding areas, including locally-important mineral resource recovery sites. The applicable land use plan for the Convair Lagoon site is the Port Master Plan, which does not identify any important mineral resources in the area and does not designate plans for mineral resource extraction (District, 2010). The Convair Lagoon Alternative would not result in the loss of any locally-important minerals. Therefore, no impact would occur and no further analysis is required.

Noise

Would the Convair Lagoon Alternative result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Convair Lagoon is located in a heavily developed urban area with no surrounding noise-sensitive land uses. Noise generated from construction operations associated with this alternative would come from the use of barges, dump trucks, cranes and hydraulic pumps. Construction activities would generate temporary, periodic increases in noise levels on and near the site. However, construction operations would comply with the City of San Diego Noise Level Compatibility Standards and City of San Diego Noise Ordinance. Compliance with these regulations would ensure that construction of the Convair Lagoon Alternative would not generate noise in excess of established standards. Additionally, upon completion of construction, only an undeveloped, paved parcel of land would remain and no operational noise would occur. Therefore, a significant impact would not occur and no further analysis is required.

Would the Convair Lagoon Alternative result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Construction of the Convair Lagoon Alternative would generate temporary periodic increases in noise levels. However, the site is located within a heavily developed urban area where construction related noises would be consistent with ambient noise levels. For example, the SDIA is located approximately 1,000 feet directly north of the alternative's site. Noise associated with aircraft operations at the San Diego International Airport average 99 decibels for departures and 95 decibels for arrivals near the runway approximately 2,000 feet from the project site (single event noise exposure level) (SDCRAA, 2010a). However, the noise levels at the site from aircraft operations at the SDIA are currently 65 dBA CNEL (SDCRAA, 2010a). In addition, the nearest sensitive receptor (residences) is located approximately 0.8 mile to the east near the intersection of West Laurel Street and Kettner Boulevard, where the CNEL associated with SDIA operations is 75 dBA CNEL (SDCRAA, 2010b). The distance from the construction site to these residences is approximately 0.8 mile, which is a sufficient distance to attenuate noise levels from construction equipment to ambient levels, assuming noise levels associated with the operation of heavy construction equipment typically range from about 78 to 88 decibels Leq at 50 feet from the source (FHWA, 2006), and the standard distance attenuation criteria of 3dBA per doubling of distance.

Construction of the Convair Lagoon Alternative would comply with the City of San Diego Noise Level Compatibility Standards and City of San Diego Noise Ordinance. Noise generated from these construction activities would be temporary in nature and due to the surrounding land uses, would not exceed the existing noise levels in the area. Further, construction activities would not involve blasting or pile driving, and therefore would not result in excessive groundborne vibration. Additionally, upon completion of construction, only an undeveloped, paved parcel of land would remain and no operational noise would occur. Therefore, the Convair Lagoon Alternative would not result in excessive noise levels or vibration.

Would the Convair Lagoon Alternative result in a substantial permanent increase in ambient noise levels in the Convair Lagoon Alternative vicinity above levels existing without the Convair Lagoon Alternative?

Noise generated from construction activities would be temporary in nature. Upon completion of the Convair Lagoon Alternative, the site would be converted from a submerged lagoon to an undeveloped, above-ground, paved parcel of land. No permanent operational noise would occur and the Convair Lagoon Alternative would not result in any permanent increase in ambient noise. Therefore, no impact would occur and no further analysis is required.

Would the Convair Lagoon Alternative result in a substantial temporary or periodic increase in ambient noise levels in the Convair Lagoon Alternative vicinity above levels existing without the Convair Lagoon Alternative?

Construction of the Convair Lagoon Alternative would generate temporary periodic increases in noise levels. However, the site is located within a heavily developed urban area where construction related noises would be consistent with ambient noise levels. For example, the SDIA is located approximately 1,000 feet directly north of the alternative's site. Noise associated with aircraft operations at the San Diego International Airport average 99 decibels for departures and 95.2 decibels for arrivals near the runway approximately 2,000 feet from the project site (single event noise exposure level) (SDCRAA, 2010a). However, the noise levels at the site from aircraft operations at the SDIA are currently 65 dBA CNEL (SDCRAA, 2010a). In addition, the nearest sensitive receptor (residences) is located approximately 0.8 mile to the east near the intersection of West Laurel Street and Kettner Boulevard, where the CNEL associated with SDIA operations is 75 dBA CNEL (SDCRAA, 2010b). The distance from the construction site to these residences is approximately 0.8 mile, which is a sufficient distance to attenuate noise levels from construction equipment to ambient levels, assuming noise levels associated with the operation of heavy construction equipment typically range from about 78 to 88 decibels Leq at 50 feet from the source (FHWA, 2006), and the standard distance attenuation criteria of 3dBA per doubling of distance.

Furthermore, construction operations would comply with the City of San Diego Noise Level Compatibility Standards and the City of San Diego Noise Ordinance. Therefore, the Convair Lagoon Alternative would not result in a substantial increase in ambient noise and no impact would occur.

For an area located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Convair Lagoon Alternative expose people residing or working in the area to excessive noise levels?

The Convair Lagoon Alternative is located within the Airport Land Use Compatibility Plan Airport Influence Area for the San Diego International Airport. However, the Convair Lagoon Alternative would not include the construction of any structure or building in which people would work or reside. Therefore, implementation of the Convair Lagoon Alternative would not expose people to excessive noise levels from the San Diego International Airport. Therefore, no impact would occur and no further analysis is required.

For a Convair Lagoon Alternative within the vicinity of a private airstrip, would the Convair Lagoon Alternative expose people residing or working in the Convair Lagoon Alternative area to excessive noise levels?

The site is not located within a private airport land use plan or located within two miles of a private airport. Additionally, the Convair Lagoon alternative does not include the construction of any structure or building where people would work or reside. Therefore, the Convair Lagoon Alternative would not expose people residing or working in the area to excessive noise levels from a private airport. Therefore, no impact would occur and no further analysis is required.

Population and Housing

Would the Convair Lagoon Alternative induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

The Convair Lagoon Alternative would not directly or indirectly induce population growth in the area because this alternative would not create any new housing units or employment generating land uses. Upon completion of this alternative, Convair Lagoon would be converted from a submerged lagoon to an undeveloped, above-ground, paved parcel of land. No structures, water infrastructure or wastewater infrastructure would be constructed on the completed site. Therefore, the Convair Lagoon Alternative would not directly or indirectly induce substantial population growth and no impact would occur.

Would the Convair Lagoon Alternative displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No homes exist and no people reside on the Convair Lagoon Alternative site. Therefore, construction of this alternative would not displace any existing housing units, necessitating the construction of replacement housing elsewhere. Therefore, no impact would occur and no further analysis is required.

Would the Convair Lagoon Alternative displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No homes exist and no people reside on the Convair Lagoon Alternative site. Therefore, implementation of this alternative would not displace any people and would not require the construction of replacement housing elsewhere. Therefore, no impact would occur and no further analysis is required.

Public Services

Would the Convair Lagoon Alternative result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection services?

The City of San Diego Fire-Rescue Department provides fire protection services to the site and surrounding areas. Upon completion of this alternative, the site would be converted from a submerged lagoon to an undeveloped, above-ground, paved parcel of land with no structures. The Convair Lagoon Alternative would not include the construction of any new buildings or structures that would involve human habitation or occupancy. Therefore, the Convair Lagoon Alternative would not increase the local population and would not impact the service standards of the City of San Diego Fire-Rescue Department by increasing service demand. As a result there would be no need to develop new or physically alter existing fire protection facilities. Therefore, no impact would occur and no further analysis is required.

Would the Convair Lagoon Alternative result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection services?

Police protection service is provided to the site and surrounding area from the Harbor Police and City of San Diego Police Department. Upon completion of this alternative, the site would be converted from a submerged lagoon to an undeveloped, above-ground, paved parcel of land with no structures. The Convair Lagoon Alternative would not include the construction of any new buildings or structures that would involve human habitation or occupancy. Therefore, the Convair Lagoon Alternative would not increase the local population and would not impact the service standards of the Harbor Police or the City of San Diego Police Department by increasing service demand. As a result there would be no need to develop new or physically alter existing police protection facilities. Therefore, no impact would occur and no further analysis is required.

Would the Convair Lagoon Alternative result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for school services?

School service is provided to the site and surrounding area by the San Diego Unified School District. Upon completion of this alternative, the site would be converted from a submerged lagoon to an undeveloped, above-ground, paved parcel of land with no structures. The

Convair Lagoon Alternative would not include the construction of any new buildings or structures that would involve human habitation or occupancy. Therefore, the Convair Lagoon Alternative would not increase the local population and would not impact the service standards of the San Diego Unified School District by increasing service demand. As a result there would be no need to develop new or physically alter existing school facilities. Therefore, no impact would occur and no further analysis is required.

Would the Convair Lagoon Alternative result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities?

Upon completion of the Convair Lagoon Alternative, the site would be converted from a submerged lagoon to an undeveloped, above-ground, paved parcel of land with no structures. The Convair Lagoon Alternative would not include the construction of any new buildings or structures that would involve human habitation or occupancy. Therefore, the Convair Lagoon Alternative would not increase the local population and would not impact the performance objectives for any other public facility. As a result, there would be no need to develop new or physically alter existing governmental facilities. Therefore, no impact would occur and no further analysis is required.

Recreation

Would the Convair Lagoon Alternative increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

The Convair Lagoon Alternative does not include the construction of any new buildings or structures that would involve human habitation or occupation. Upon completion of the Convair Lagoon Alternative, the site would be converted from a submerged lagoon to an undeveloped, above-ground, paved parcel of land with no structures. The Convair Lagoon Alternative would not increase population in the area and would not increase the demand for existing recreational facilities. Therefore, no impact to existing recreational facilities would occur and no further analysis is required.

Does the Convair Lagoon Alternative include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The Convair Lagoon Alternative does not include the construction of any new buildings or structures that would involve human habitation or occupation. Upon completion of the Convair Lagoon Alternative, the site would be converted from a submerged lagoon to an undeveloped, above-ground, paved parcel of land with no structures. The Convair Lagoon Alternative would not increase population in the area and would not require the construction or expansion of recreational facilities elsewhere. Therefore, no impact would occur and no further analysis is required.

Transportation and Traffic

Would implementation of the Convair Lagoon Alternative conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit or conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

The Convair Lagoon Alternative would generate truck trips during the 15-month construction period. All five phases of construction would generate a total of 7,714 truck trips. The maximum daily truck trips that would occur during the construction period would be 98 truck trips per day.

For this analysis, truck trips have been converted to passenger car equivalents (PCEs) using a factor of three (one truck = three passenger cars). Therefore, the alternative would generate a total of 23,142 PCE truck trips during the 15-month construction period. The maximum daily trips during the construction period would be 294 PCE truck trips.
Once construction is completed, no permanent vehicular trips would be associated with operation of the Convair Lagoon Alternative.

The Convair Lagoon Alternative would generate daily construction-related trips for the following two purposes, which are discussed further under separate headings below:

1. Disposal of highly contaminated materials
2. Construction of the confined disposal facility (CDF) at Convair Lagoon

Disposal of Highly Contaminated Materials. The Convair Lagoon Alternative would result in the generation of truck trips associated with the implementation of Phase 4, Sediment Transport and Placement, Sub-Phase B: Dewatering and Disposal. Under this alternative, approximately 21,510 cy, or 15 percent, of dredged sediment from the Shipyard Sediment site would not qualify for placement in the Convair Lagoon Alternative CDF because of high contamination levels. This 21,510 cy of contaminated dredged sediment would be transported to land via barge and would require dewatering prior to loading the dredge materials onto trucks and transporting it to a Class I landfill for disposal. It is estimated that approximately 2,205 truck trips (6,615 PCE truck trips) would be required to transport the highly contaminated materials to the Class I landfill site, which most likely would be Kettleman Hills Landfill in Kings County, California. The preferred route to Kettleman Hills Landfill in Kings County, California is via I-5 north. ~~Trucks departing from potential Staging Areas 1 through 4 would access I-5 south via E. Harbor Drive and 28th Street; trucks departing from Staging Area 5 would access I-5 south either directly from Bay Marina Drive or from W. 32nd Street to Marina Way to Bay Marina Drive.~~

The process regarding the dredging, dewatering and transport of 15 percent of highly contaminated materials removed from the Shipyard Sediment site is exactly the same as is described in Chapter 3.0 Project Description. Therefore, the analysis provided in Section 4.1, Traffic, for the Shipyard Sediment Site Project addressing conflicts with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system would apply to this portion of the Convair Lagoon Alternative and is not repeated here. Section 4.1, Traffic, identifies three mitigation measures to reduce impacts associated with truck traffic from the five potential staging areas to the selected Class I disposal facility, most likely Kettleman Hills Landfill in Kings County, California. These mitigation measures would also be implemented under the Convair Lagoon Alternative to reduce impacts associated with truck trips transporting highly contaminated materials. No new impacts associated with the disposal of highly contaminated materials would occur under this alternative that were not adequately addressed in and mitigated by the proposed project analysis. Therefore, no new mitigation measures beyond those identified for the proposed project would be required.

Construction of the Confined Disposal Facility (CDF) in Convair Lagoon. The Convair Lagoon Alternative would also result in the generation of truck trips associated with the construction of the CDF in Convair Lagoon. As identified in Table 5-6, Convair Lagoon Alternative Truck and Barge Trips (by Construction Phase), Phases 2, 3 and 5 would generate a combined total of 5,509 truck trips (16,527 PCE truck trips) during construction. Phase 2 (Containment Barrier Construction) would generate a total of 4,174 truck trips (12,522 PCE truck trips); Phase 3 (Storm Drain Outlet Extension) would generate 205 truck trips (615 PCE truck trips); and Phase 5 (Containment Cap Installation) would generate 1,310 truck trips (3,930 PCE truck trips). However, the maximum daily truck trips that would occur during the 15-month construction period would be 98 truck trips per day or 294 PCE truck trips as part of Phase 2 of construction.

Construction truck trips associated with the Convair Lagoon Alternative would mostly occur on city of San Diego streets; therefore, the City of San Diego Traffic Impact Study Manual (1998) was used as the basis for the analysis of impacts associated with construction truck trips. According to the Traffic Impact Study Manual, traffic impact studies are required for developments that generate more than 500 daily trip ends and do not conform to the applicable community plan. The threshold is 1,000 daily trip ends if a project conforms to the community plan. These thresholds were set by the City to allow projects that do not generate a substantial amount of traffic to avoid preparation of a traffic impact study, since the trip ends they generate are generally too small to result in a significant impact on the surrounding circulation system. Since the project is not within an applicable City of San Diego community plan, the 500 daily trip end threshold was used for this analysis.

Construction of the Phase 2 would generate a maximum of 294 PCE truck trips, which is less than the 500 daily trip end threshold set by the City. Therefore, in accordance with the City's Traffic Impact Study Manual (1998), a traffic impact study would not be required. Because the number of trips is too low to trigger the preparation of a traffic impact study, the District has determined that the generation of a maximum of 294 PCE truck trips per day during construction of the CDF would not result a significant impact on the local circulation system. Therefore, implementation of the Convair Lagoon Alternative would not conflict with any applicable circulation system traffic performance measures or plans.

It should be noted that the Convair Lagoon Alternative would implement a Parking Management Plan, as outlined in Section 4.1, Traffic, of this EIR and a Traffic Control Plan as outlined in Section 4.3, Hazards and Hazardous Materials, of this EIR. Further, the Convair Lagoon Alternative would implement mitigation measure 4.6-1, outlined in Section 4.6, Air Quality, of this EIR, which requires construction activities to be timed so as not to interfere with peak hour traffic and to minimize obstructions of traffic lanes adjacent to the site. Implementation of these mitigation measures would reduce indirect traffic-related impacts to a less than significant level.

Would the Convair Lagoon Alternative result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

Refer to Section 5.10.8, Hazards and Hazardous Materials, for a detailed discussion regarding construction activities associated with the Convair Lagoon Alternative and their potential to impair air traffic patterns. Upon completion of construction, the Convair Lagoon Alternative site would consist of an above-ground, undeveloped, paved parcel of land. No structures or buildings would occur on the site that could impact air traffic patterns. Therefore, implementation of the Convair Lagoon Alternative would not require changes in air traffic patterns that could result in substantial safety risks. No impact would occur and no further analysis is required.

Would the Convair Lagoon Alternative substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The Convair Lagoon Alternative does not involve any roadway or intersection improvements, and does not involve any uses that are not compatible with the surrounding area. Upon completion of construction, the Convair Lagoon Alternative site would consist of an above-ground, undeveloped, paved parcel of land. No vehicular trips would be associated with operation of the Convair Lagoon Alternative. Therefore, the Convair Lagoon

Alternative would not increase traffic hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses. No impact would occur and no further analysis is required.

Would the Convair Lagoon Alternative result in inadequate emergency access?

As described in Section 5.10.1, Alternative Description, construction of the alternative would result in approximately 7,714 truck trips and 116 barge trips taking place over a 15 month construction period. The maximum daily truck trips that would occur during construction would be 98 trips per day.

To mitigate indirect impacts associated with construction traffic, the Convair Lagoon Alternative would implement a Parking Management Plan, as outlined in Section 4.1, Traffic, of this EIR and a Traffic Control Plan as outlined in Section 4.3, Hazards and Hazardous Materials, of this EIR. Furthermore, the Convair Lagoon Alternative would implement mitigation measure 4.6.1, outlined in Section 4.6, Air Quality, of this EIR, which requires construction activities to be timed so as not to interfere with peak hour traffic and to minimize obstructions of traffic lanes. Implementation of these mitigation measures would ensure that the alternative would not result in inadequate emergency access during construction. Upon completion of construction, the Convair Lagoon Alternative site would consist of an above-ground, undeveloped, paved parcel of land. No vehicular trips or structures would be associated with operation of the Convair Lagoon Alternative, which could result in inadequate emergency access. Therefore, no impact would occur and no further analysis is required.

Would the Convair Lagoon Alternative conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

Construction of the Convair Lagoon Alternative may result in the temporary closure of the bicycle path located immediately north of the site along Harbor Drive. However, this impact would be temporary in nature and the bicycle path would re-open upon completion of construction. No permanent impacts to the bicycle route would occur as a result of the alternative. In addition, the alternative would not conflict with policies, plans or programs adopted for other modes of alternative transportation, such as buses, trolleys/trains, or pedestrian paths because the construction activities would not occur in public rights-of-way where these facilities area located. Therefore, the Convair Lagoon Alternative would not conflict with adopted policies, plans or programs supporting alternative transportation. No impact would occur and no further analysis is required.

Utilities and Service Systems

Would the Convair Lagoon Alternative exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

The Convair Lagoon Alternative would not create any residential, commercial, industrial or institutional development that would require wastewater treatment. Upon completion of construction, the site would consist of an undeveloped, above-ground, paved parcel of land with no structures or wastewater infrastructure. The Convair Lagoon Alternative would not create any wastewater treatment demand and would therefore not exceed the wastewater treatment requirements of the San Diego Water Board. Therefore, no impact would occur and no further analysis is required.

Would the Convair Lagoon Alternative require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

The Convair Lagoon Alternative would not create any residential, commercial, industrial or institutional development that would require new water facilities or wastewater treatment facilities. Upon completion of construction, the site would consist of an undeveloped, above-ground, paved parcel of land with no structures or wastewater infrastructure. The Convair Lagoon Alternative would not create any water or wastewater demand and would not require or result in the construction of new water or wastewater facilities. Therefore, no impact would occur and no further analysis is required.

Would the Convair Lagoon Alternative require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

As part of the Convair Lagoon Alternative, two on-site storm drains would be extended. The environmental impacts associated with the expansion of these facilities are evaluated in the various environmental topics within Section 5.10 of this analysis.

Would the Convair Lagoon Alternative have sufficient water supplies available to serve the Convair Lagoon Alternative from existing entitlements and resources, or are new or expanded entitlements needed?

The Convair Lagoon Alternative would not create any residential, commercial, industrial or institutional development that would require water supplies. Upon completion of construction, the site would consist of an undeveloped, above-ground, paved parcel of land with no structures or water infrastructure. The alternative would not require the provision of a potable water supply. Therefore, no impact would occur and no further analysis is required.

Would the Convair Lagoon Alternative result in a determination by the wastewater treatment provider which serves or may serve the Convair Lagoon Alternative that it has adequate capacity to serve the Convair Lagoon Alternative's demand in addition to the provider's existing commitments?

The Convair Lagoon Alternative would not create any residential, commercial, industrial or institutional development that would require wastewater treatment. Upon completion of construction, the site would consist of an undeveloped, above-ground, paved parcel of land with no structures or wastewater infrastructure. The alternative would not require the provision of wastewater facilities. Therefore, no impact would occur and no further analysis is required.

Would the Convair Lagoon Alternative be served by a landfill with sufficient permitted capacity to accommodate the Convair Lagoon Alternative's solid waste disposal needs?

The Convair Lagoon Alternative would not create any residential, commercial, industrial or institutional development that would generate solid waste or impact landfill capacity because of its operational characteristics. The project would involve demolition of existing facilities at the Convair Lagoon site; however, these materials would be placed in the CDF created by this alternative. This alternative would also generate approximately 21,510 yards of contaminated sediment that would be exported to the Kettleman Hills Landfill located near Kettleman City, California. The Kettleman Hills Landfill currently has capacity to accommodate this material. In addition, "The Kettleman Hills Landfill is currently proposing an expansion project to increase its hazardous waste operations. The proposed expansion would increase the capacity at the existing hazardous waste landfill and would construct a new hazardous waste landfill once the currently open landfill has reached its capacity. Implementation of this project would ensure long-term hazardous waste disposal capacity at the facility for an additional 30 to 35 years (WM, 2011)."

Upon completion of construction, the site would consist of an undeveloped, above-ground, paved parcel of land with no structures. Operation of the alternative would not generate solid waste or reduce landfill capacity. Therefore, no impact would occur and no further analysis is required.

Would the Convair Lagoon Alternative comply with federal, state, and local statutes and regulations related to solid waste?

The Convair Lagoon Alternative would comply with federal, state, and local statutes and regulations related to solid waste through the testing of contaminated sediment dredged from the Shipyard Sediment site to ensure that only the sediments with high levels of contamination would be exported to the Kettleman Hills Landfill, with the remaining sediments transported to the CDF at Convair Lagoon.

Figure 5-14: Port Master Plan Scenic Vistas in the Vicinity of the Convair Lagoon Alternative

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APPENDIX B

TABLES

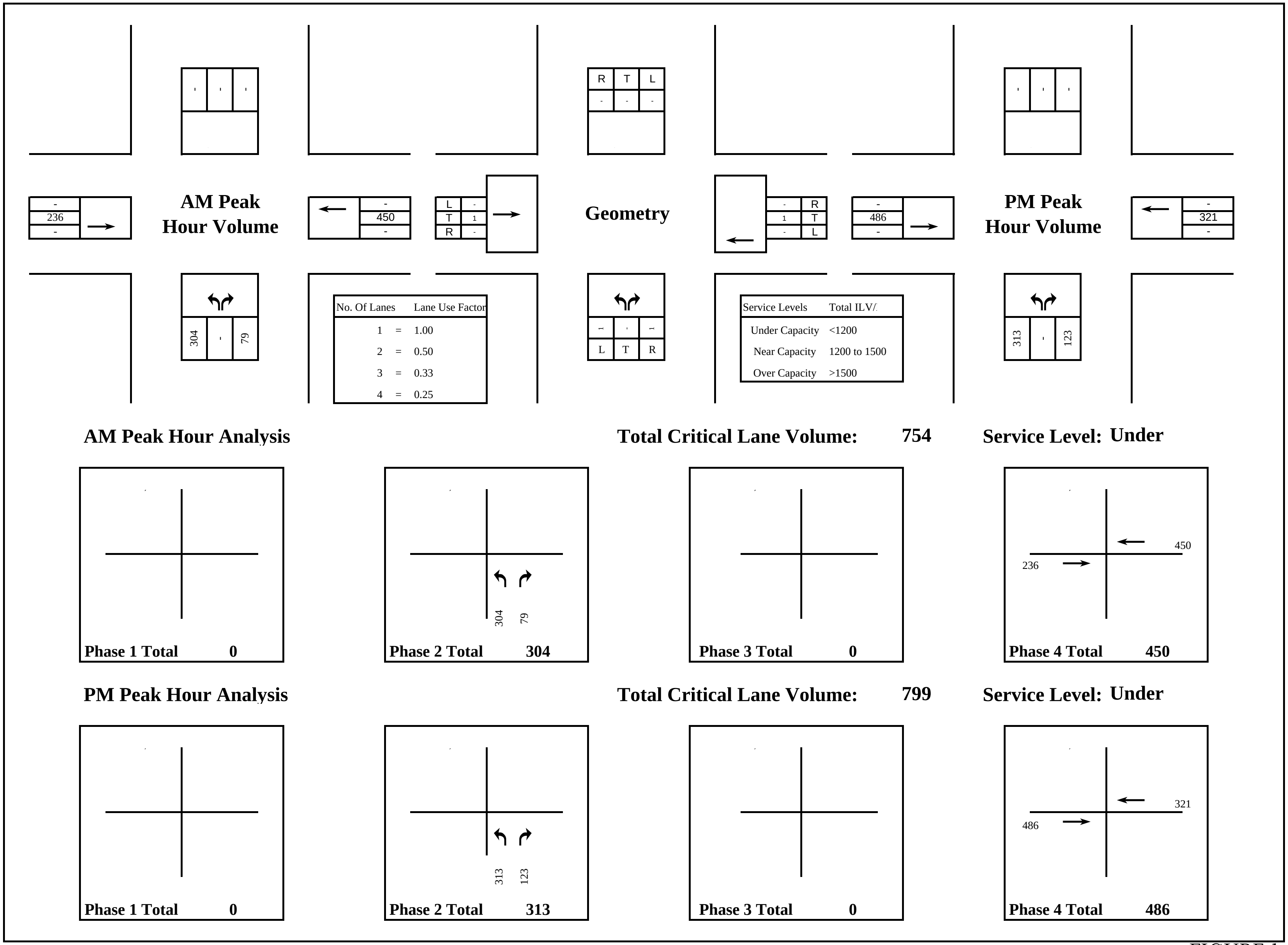
Table A: Existing Plus Project ILV Summary

		AM Peak Hour		PM Peak Hour	
		ILV/HR	Capacity	ILV/HR	Capacity
Existing					
9	I-5 Northbound Off-Ramp/National Avenue	754	Under	799	Under
11	I-5 Northbound Ramps/24th Street	1,352	Near	1,071	Under
12	I-5 Southbound Ramps/24th Street	584	Under	864	Under
Existing Plus Project (Staging Areas 1 & 2)					
9	I-5 Northbound Off-Ramp/National Avenue	778	Under	812	Under
Existing Plus Project (Staging Area 3)					
9	I-5 Northbound Off-Ramp/National Avenue	778	Under	812	Under
Existing Plus Project (Staging Area 4)					
9	I-5 Northbound Off-Ramp/National Avenue	778	Under	812	Under
Existing Plus Project (Staging Area 5)					
11	I-5 Northbound Ramps/24th Street	1,352	Near	1,071	Under
12	I-5 Southbound Ramps/24th Street	600	Under	870	Under

ILV = Intersection Lane Vehicles

HR = Hour

Capacity shown as Under (less than 1,200 ILV/hr), Near (1,200 to 1,500 ILV/hr), or Over (greater than 1,500 ILV/hr)



LSA

FIGURE 1

Shipyard Sediment Remediation Project
Existing ILV Calculations
I-5 Northhbound Off-Ramp/National Avenue

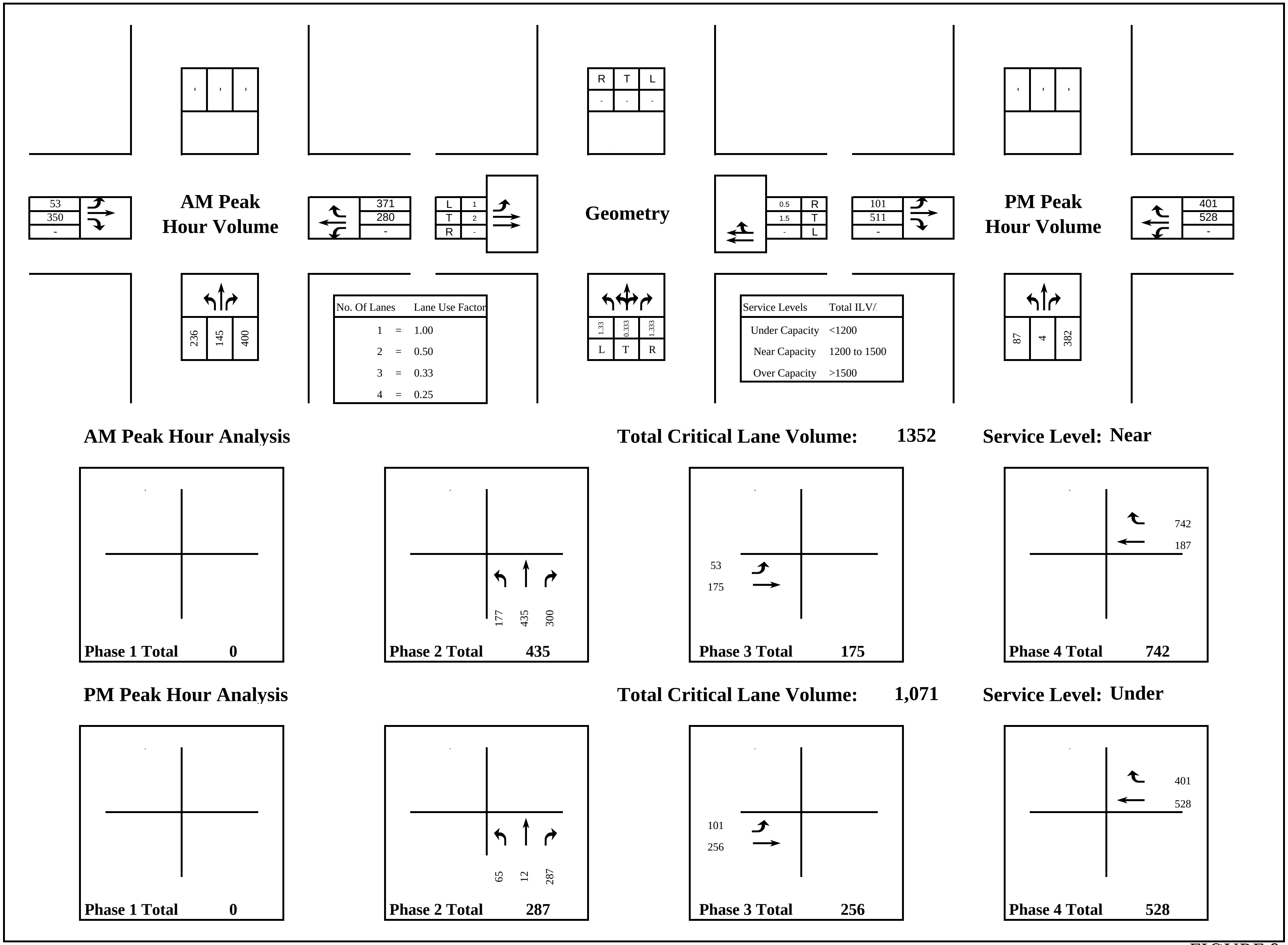


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FIGURE 2

Shipyard Sediment Remediation Project
Existing ILV Calculations
I-5 Northbound Ramps/24th Street

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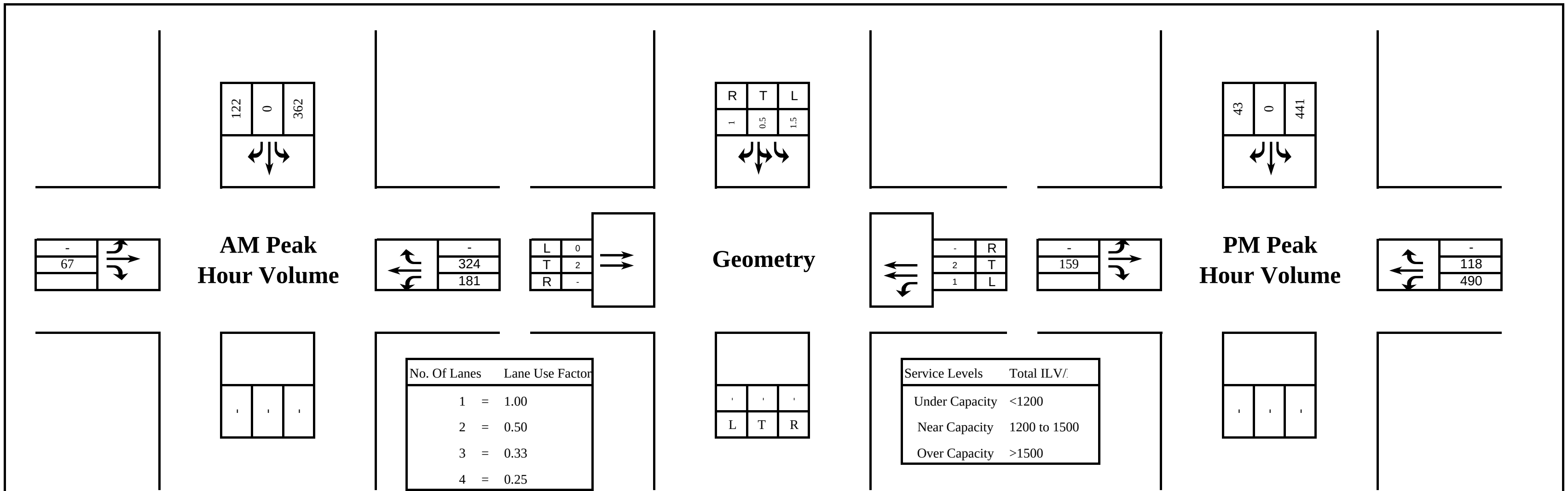
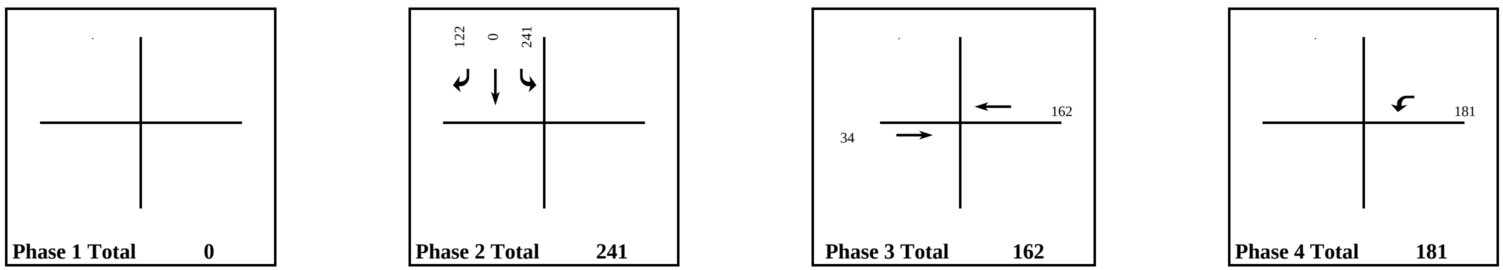


AM Peak Hour Analysis **Total Critical Lane Volume: 584** **Service Level: Under**



PM Peak Hour Analysis **Total Critical Lane Volume: 864** **Service Level: Under**

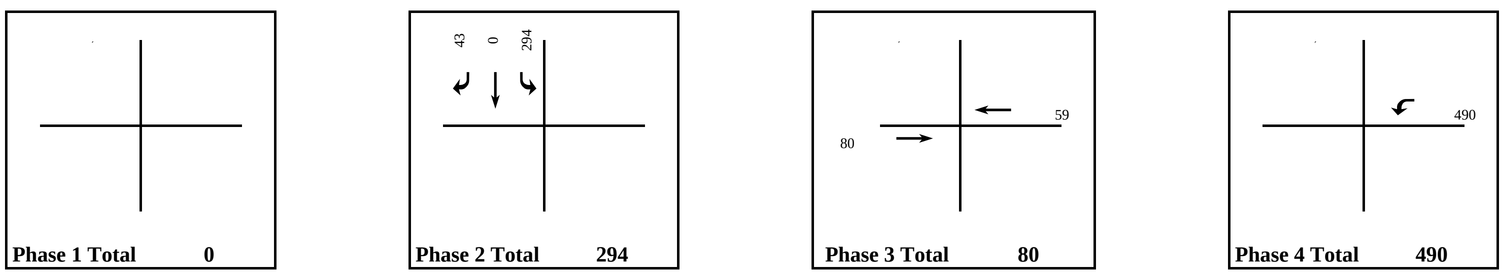


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FIGURE 3

Shipyard Sediment Remediation Project
Existing ILV Calculations
I-5 Southbound Ramps/24th Street

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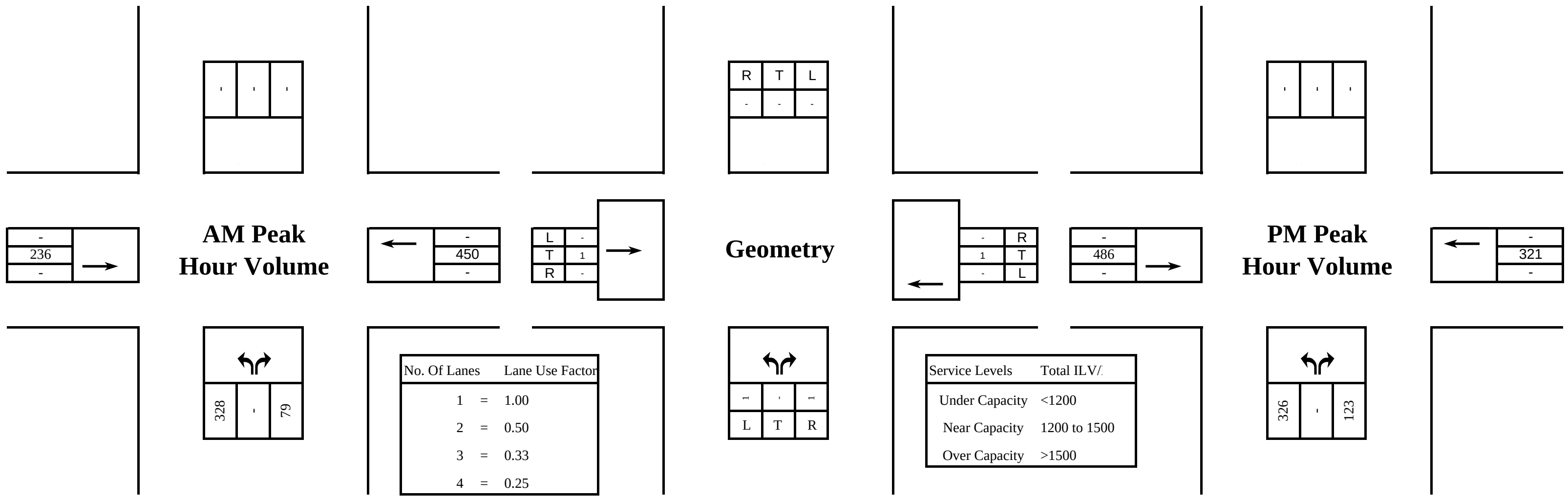
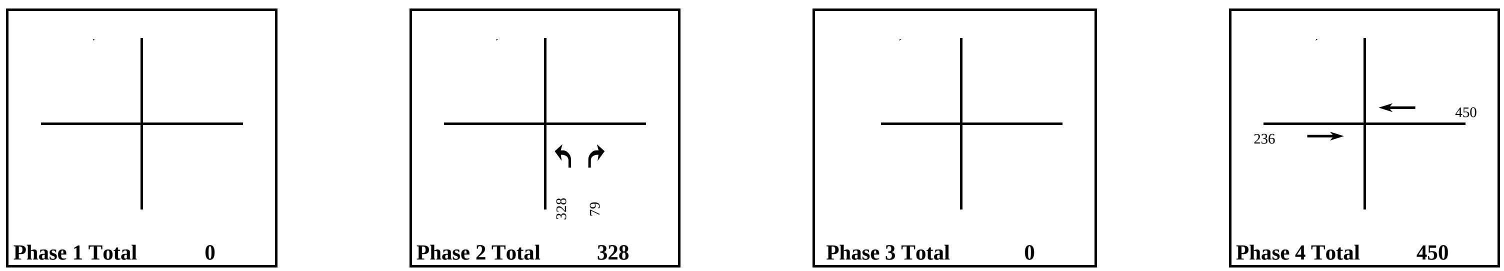


AM Peak Hour Analysis **Total Critical Lane Volume: 778** **Service Level: Under**



PM Peak Hour Analysis **Total Critical Lane Volume: 812** **Service Level: Under**

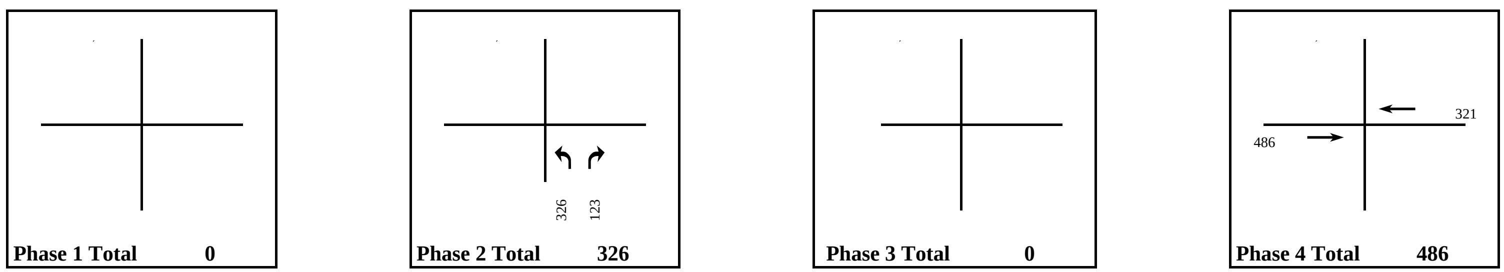


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FIGURE 4

Shipyard Sediment Remediation Project
Existing Plus Project (Staging Areas 1 & 2) ILV Calculations
I-5 Northhbound Off-Ramp/National Avenue

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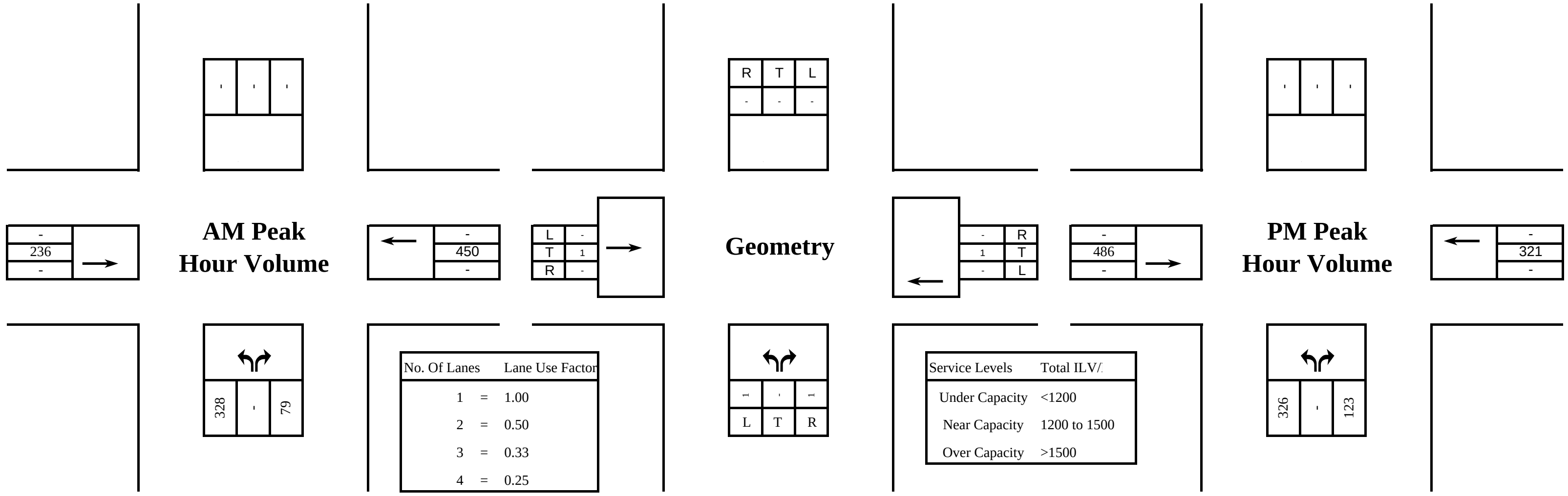
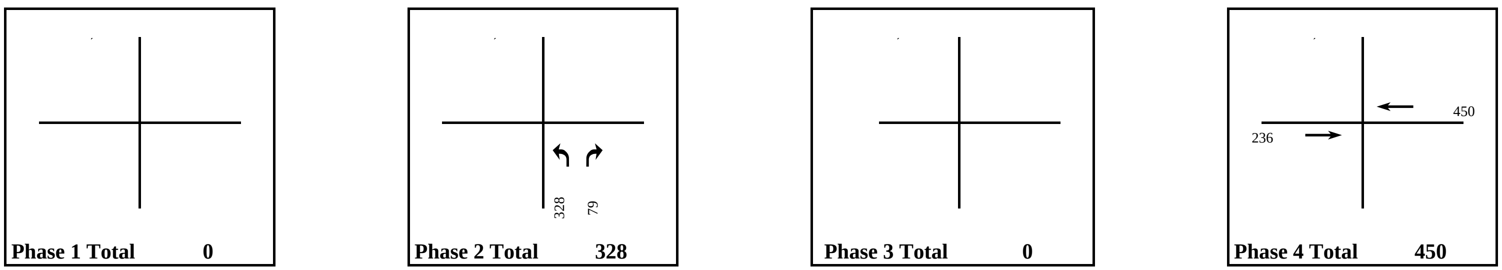


AM Peak Hour Analysis **Total Critical Lane Volume: 778** **Service Level: Under**



PM Peak Hour Analysis **Total Critical Lane Volume: 812** **Service Level: Under**

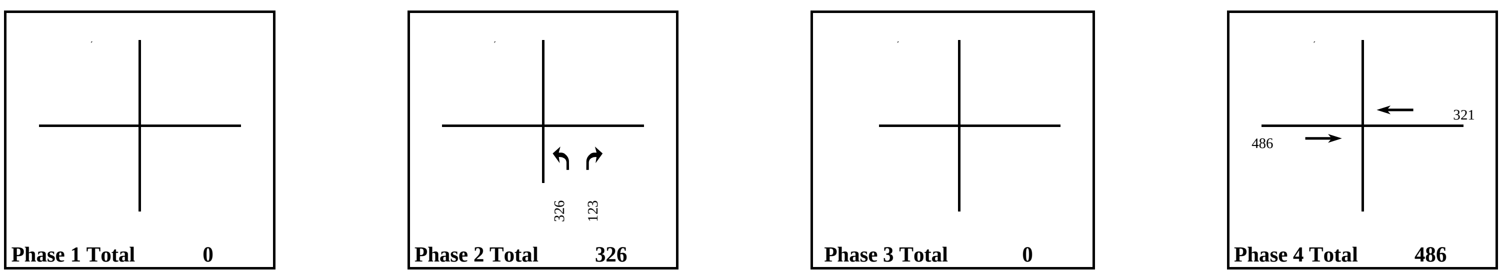


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FIGURE 5

Shipyard Sediment Remediation Project
Existing Plus Project (Staging Area 3) ILV Calculations
I-5 Northhbound Off-Ramp/National Avenue

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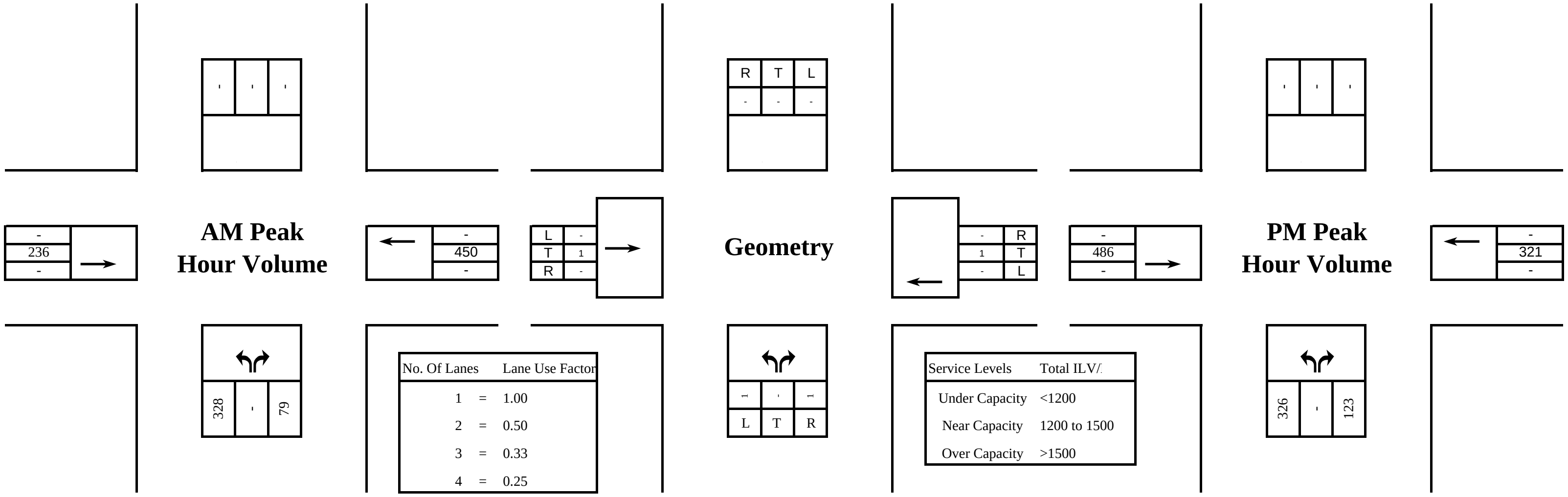
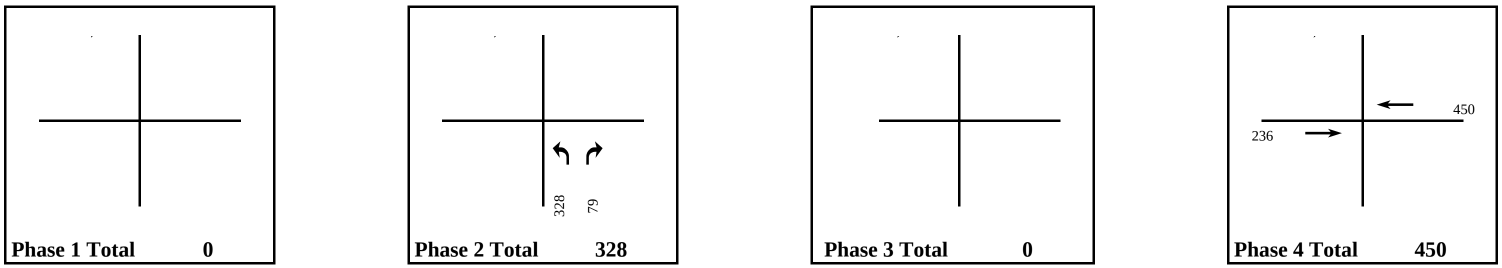


AM Peak Hour Analysis **Total Critical Lane Volume: 778** **Service Level: Under**



PM Peak Hour Analysis **Total Critical Lane Volume: 812** **Service Level: Under**

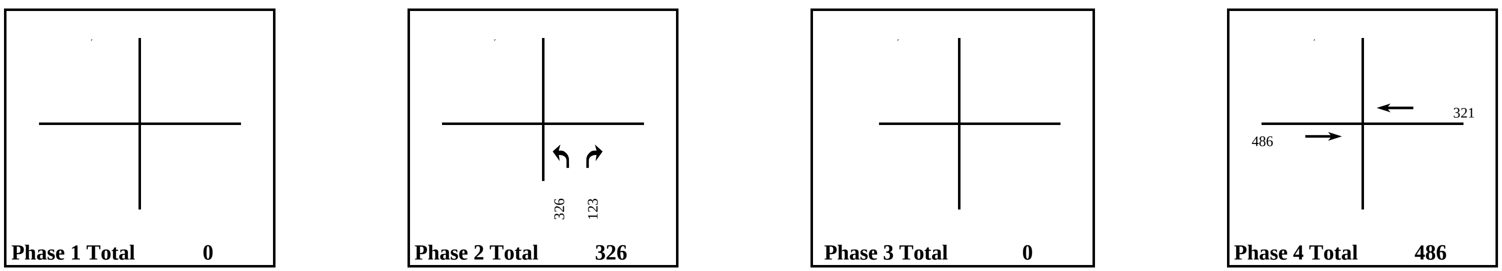


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FIGURE 6

Shipyard Sediment Remediation Project
Existing Plus Project (Staging Area 4) ILV Calculations
I-5 Northhbound Off-Ramp/National Avenue

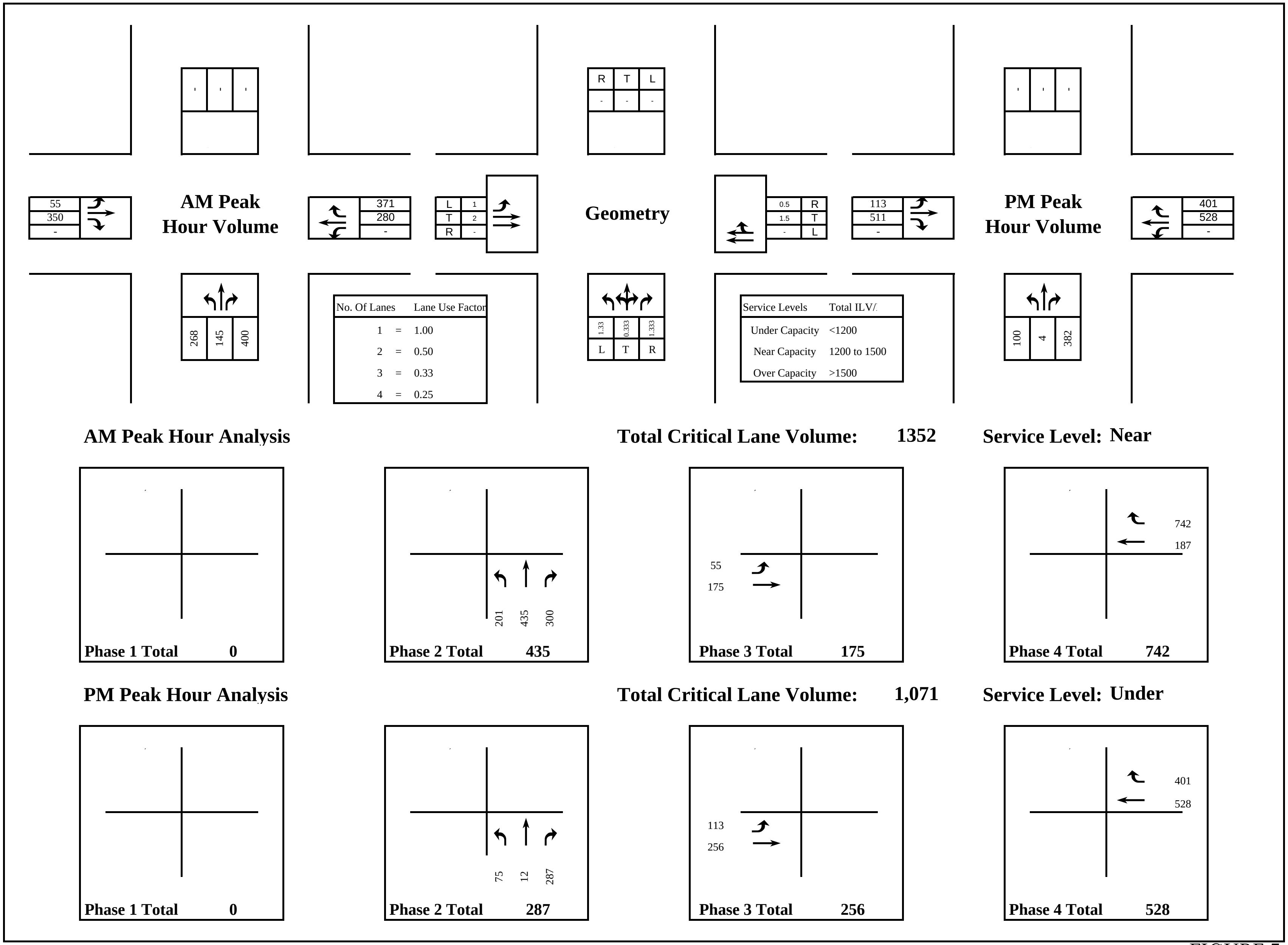

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FIGURE 7

Shipyard Sediment Remediation Project
Existing Plus Project (Staging Area 5) ILV Calculations
I-5 Northbound Ramps/24th Street

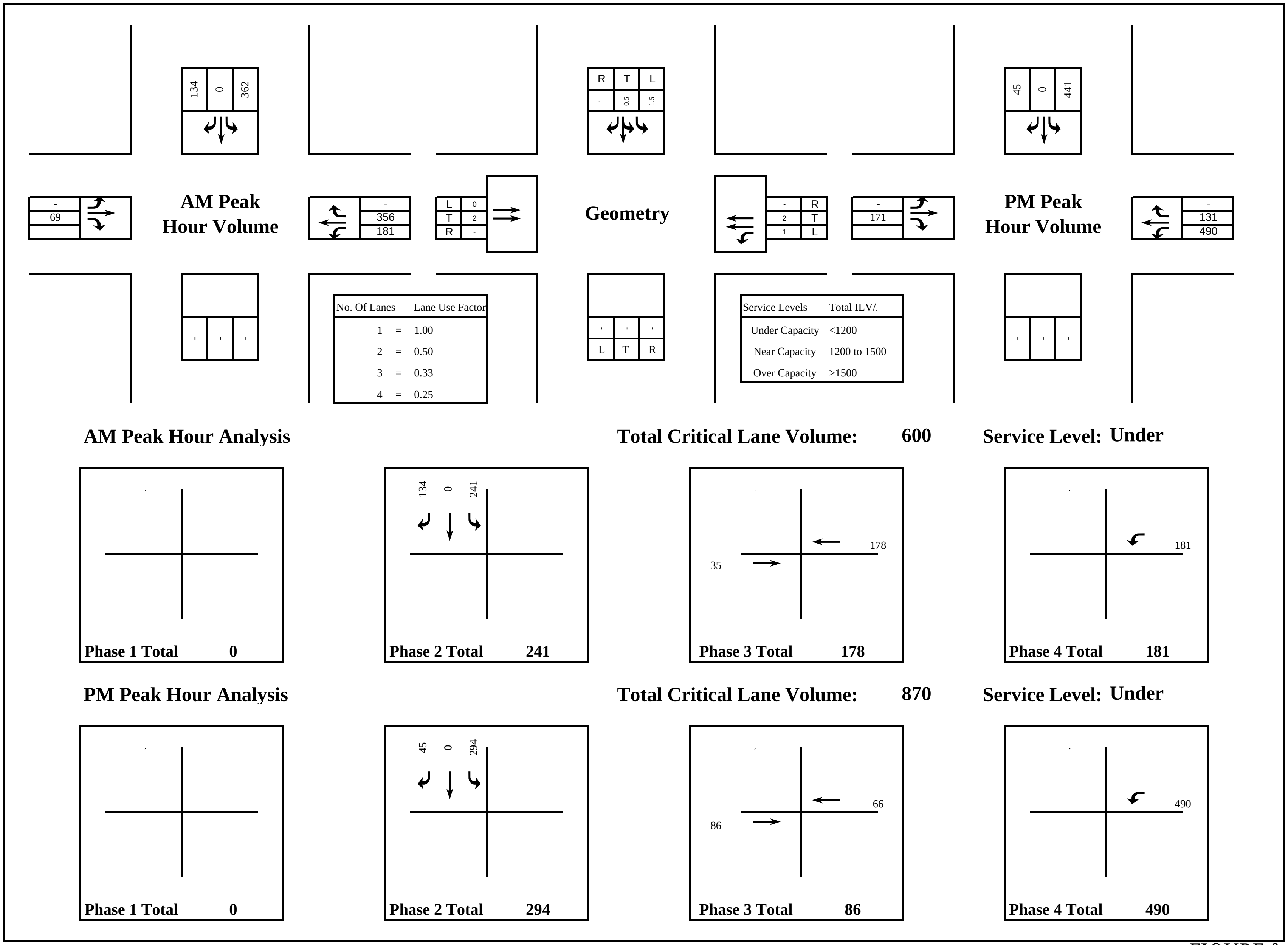

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FIGURE 8

Shipyard Sediment Remediation Project
Existing Plus Project (Staging Area 5) ILV Calculations
I-5 Southbound Ramps/24th Street

Table F: Construction Emissions by Task (lb/day)

Task	CO	ROCs	NO_X	SO_X	PM_{10}	$PM_{2.5}$	CO_2
Debris and Pile Removal	53.8	8.2	148.4	5.2	5.4	4.7	10,846.8
Dredging of Project Site	70.0	14.6	340.7	8.6	11.3	10.3	15,171.9
Landside Staging Area, Pad Construction	83.2	14.3	163.8	20.3	8.7	7.6	14,045.8
Landside Staging Area, Operations	168.6	22.4	333.8	7.7	12.6	11.0	36,201.1
Covering of Sediment Near Structures	42.8~~30.9~~	7.1~~5.5~~	128.8~~105.2~~	3.9~~3.9~~	4.7~~3.9~~	4.3~~3.5~~	8393.6 ~~5,747.9~~

Source: LSA Associates, Inc., March 2011.

Table G: Peak Daily Construction Emissions (lbs/day)

Activity	CO	ROCs	NO_X	SO_X	PM_{10}	$PM_{2.5}$	CO_2
Pad Construction	83.2	14.3	163.8	20.3	8.7	7.6	14,045.8
Dredging/Landside Operations	335.2 ~~323.3~~	52.3 ~~50.7~~	951.7 ~~928.1~~	25.4 ~~25.4~~	34.0 ~~33.2~~	30.3 ~~29.5~~	70,613.4 ~~67,967.7~~
San Diego Emissions Threshold	**550**	**137**	**250**	**250**	**100**	**NA[1]**	**NA**
Exceed Significance?	NO	NO	YES	NO	NO	NO	NA

Source: LSA Associates, Inc., March 2011.

[1] No threshold has been established.

Note: Bold face numbers indicate emissions exceeding San Diego City emissions threshold.

CO = carbon monoxide

CO_2 = carbon dioxide

NO_X = nitrogen oxides

SO_X = sulfur oxides

$PM_{2.5}$ = particulate matter less than 2.5 microns in size

ROCs = reactive organic compounds

PM_{10} = particulate matter less than 10 microns in size