

**Westside Regional Park
Septic to Sewer Project at
Bodega Bay**

Final Project Report

**State Water Resources Control Board
Proposition 40
Clean Beaches Initiative Grant Program**



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**Final Version 1.0
December 2007**

**Westside Regional Park
Septic to Sewer Project at
Bodega Bay**

Final Project Report

Conversion of Septic System to Sewer Connection

Bodega Bay Watershed

**State Water Resources Control Board
Proposition 40
Clean Beaches Grant Program**

Funding Sources:

**State Water Resources Control Board
Proposition 13 Non-point Source Pollution Control Grant Program
Proposition 40 Clean Beaches Initiative Grant Program**

**California Department of Parks and Recreation
Proposition 12 - 2000 Bond Act - Per Capita Grant**

**County of Sonoma Park Mitigation Fees
Regional Parks Major Maintenance Funds**

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**Proposition 40 Clean Beaches Initiative Grant Program
Grant Agreement No. 06-296-550-0
Grant Amount: \$171,000**

Total Project Costs: \$980,645

Contract Period: April 21, 2005 to September 30, 2008

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- Bodega Bay Public Utility District Service Area Agreement
- Project Assessment and Evaluation Plan (PAEP)
- Articles Regarding Sources of Beach Pollution

Westside Regional Park
Septic to Sewer Project at Bodega Bay
FINAL PROJECT REPORT
Version 1.0

Executive Summary

Westside Park is located in Sonoma County at 2400 Westshore Road, on the western shore of Bodega Bay, approximately 1 ½ miles from Highway 1 and approximately one mile North of Campbell Cove Beach (See Exhibit E Project Location Map). The park has 48 overnight camping sites; one camp host site and 110 day use parking spaces for boating, picnicking and sight seeing-related uses. Annually, there are approximately 150,000 visitors to this park.

Sanitation facilities for these visitors consist of two restrooms, one with showers, and a dump station for the convenience of trailer and recreational vehicle campers. There is also a fish cleaning facility and a boat washing facility available to serve the boat launch area. Prior to the completion of this project wastewater was disposed of through three septic systems, one for each restroom and another for the dump station. The Bodega Bay Public Utilities District (BBPUD) furnishes water to the Park.

The project is strategically located on Bodega Bay between two areas that are monitored for toxicity. An adjacent tidal flat to the south includes Campbell Cove Beach, which has been closed to the public in the recent past due to public health hazards. During the SWRCB Beach Advisories' 2000, 2001 and 2002 monitoring seasons the beach was posted or closed for several days due to unknown sources of bacterial pollution. The project site is also north and adjacent to Bodega Bay Spud Point Marina, which is a candidate toxic hot spot, due to bioassay toxicity (RWQCB North Coast Region Proposed Toxic Hot Spot Cleanup Plan December 1997).

Problem Statement & Relevant Issues

Westside Park's septic systems were located within 200 feet of the shoreline at a ground surface elevation between 9 to 12 feet above sea level (USGS 1929 Datum). High tides recorded in this area over the past 20 years reached an elevation of 8.9 feet above sea level. The park's facilities were on a septic system that was prone to failure. Two of the leach fields were constructed on unconsolidated shoreline fill, tailings of the halted Bodega Bay Nuclear Power Plant construction.

In the late 90's, problems developed with the onsite septic systems at the Park. The RV dump station was closed in August 1999, due to overflow of the septic system. The other septic systems at the site were also marginally operational, with seasonally high liquid levels 12"- 18" below the surface, as noted in Regional Parks Septic Tank inspection logs. The Permit and Resource Management Department Well and Septic Section inspectors investigated the site on October 30, 2001 (file no. SEV01-1491) and confirmed that the existing septic system at the Park was subject to failure conditions, influenced by high groundwater conditions and high tides.

The Park had three failing septic systems that were impacting Bodega Bay surface water and area groundwater. To further exacerbate concerns, the site is located at the base of a watershed draining directly into Bodega Bay and over an aquifer that is the primary source of area drinking water. This situation has been a water quality and public health concern to the Sonoma County Regional Parks Department and the County Health Department Environmental Health Division for many years.

According to the "Report for Bodega Bay – Campbell Cove Tidal Circulation Study, Water Quality Testing and Source Abatement Measures Project" (June 30, 2004), wildlife was found to be the predominant source of fecal bacteria contamination in the beach sediments at Campbell Cove. However, detectable contamination was identified at Gaffney Point tidal mud flats on the south side of Westside Park. Ocean water quality at Westside Park was studied during the project to identify if there was a link between Westside Regional Park and the high levels of contamination found at Campbell Cove Beach. See Appendix 2.2 Monitoring and Documentation for Project Site Weekly Water Quality Test Results.

Eliminating the failing septic systems and connecting to the public sewer system was the preferred alternative to resolve onsite septic problems. The Local Coastal Plan, Site Master Plan and County General Plan all specify connection to the sewer to resolve onsite septic problems¹. The Regional Water Quality Control Board Non-point Source Pollution Control and Watershed Programs Application Reference Document (ARD) had also identified the project in Section 4: Inventory of Targeted Non-point Source Implementation Projects (Region 1 inventory). This inventory lists the conversion of existing septic systems to sewer systems in the Bodega Bay Geographic Watershed as project Number R1-65 following California management measures for polluted Runoff 3.4A and 3.4B.

The State Water Resources Control Board provides grants to local agencies to help implement projects at California's public beaches to meet current bacterial standards and improve the water quality of California's coastal waters.

¹ Coastal Plan (6/99 Draft) Section VII-71 page 195 item 8, General Plan Policies PF-1d and PF-1e and (1974/75) Westside Park Master Plan.

Project Goals

Westside Regional Park Septic to Sewer Project at Bodega Bay addressed these water quality concerns. To eliminate the potential contamination of groundwater, the septic systems were eliminated and the two restrooms and dump station were connected to the BBPUD sewer system.

Project scope included converting all three onsite septic systems to a Public Utility District (PUD) sewer line connection.

The primary objectives of the sewer improvement project were to:

- 1) Continue to provide additional quality recreation opportunities to visitors and residents of Sonoma County
- 2) Provide a park facility that is sensitive to the unique coastal environment
- 3) Provide park improvements that protect or restore coastal water quality, minimize impacts on surrounding area environments, and blend well with the natural landscape character of the site
- 4) Eliminate potential contamination of ground water and surface water
- 5) Provide a sanitary system for sewage disposal
- 6) Improve area water quality for public health and safety protection

BMP's included:

1. Connect to public sewer to correct failing septic systems
2. Control wastewater site pollution
3. Provide park improvements sensitive to the unique coastal environment

The County prepared a Draft Sewer Connection Feasibility Study for the project including sewer system design alternatives and estimated project improvement costs. The preferred sewer system involved construction of a grinder pump sewer system that connects to the existing BBPUD sewer mainline manhole located 500 feet north of the Park. The sewer system included construction of 1500 linear feet of 2" force main and 900 linear feet of 6" gravity sewer main line going into Westside Park connected by 400 linear feet of 4" lateral to mainline of the two restrooms and RV dump station.

Project Description

The Sonoma County Board of Supervisors on March 6, 2001 approved funding based on the project feasibility Draft Sewer Connection Feasibility Study. Sonoma County requested sewer service from the BBPUD in November 2001 based on information provided in the study. It was later determined, in a letter from the District's Engineer, that the BBPUD sewer system had capacity to connect Westside Park to the public sewer. After reviewing this letter the BBPUD Board of Directors took action and directed their staff to prepare the Sewer

Service Agreement and assess fees based on a site located Outside the BBPUD Service Area Boundary (See Exhibit E Service Area Agreement).

A Categorical Exemption §15301 (Existing Facilities) applied to this project and a Notice of Exemption was filed on February 25, 2004. The project was the minor alteration of an existing public facility, involving negligible or no expansion of use beyond that existing at the time of this determination. It was determined that the project would not result in the removal of healthy, mature, or scenic trees and would not result in cumulative impacts or significant effects to scenic or historical resources. The project area is not located on a site that is included on the lists compiled pursuant to §65962.5 of the Government Code, or within any wetland, officially designated scenic area, or officially mapped area of severe geologic hazard.

Construction included: trenches approximately 2 feet wide and between 4 - 6 feet deep for the sewer line. Trench spoil material was disposed of off-site at an approved facility and construction trenches were backfilled with clean material. The grinder pump and electrical service were also installed. A total of 0.11 acres of surface area was disturbed. The existing septic system was decommissioned and left in place, as required by the permit.

Once construction began, County staff inspected construction including visual assessment, photo documentation, and water quality sampling as required measures of the success of the project and potential impacts to local coastal conditions. Sewer system connection improvements were reported on and monitored before, during and after the project as part of the implementation in conjunction with other watershed groups and regulatory entities including County Environmental Health monitoring programs and the Quality Assurance Project Plan required for grant funding.

Monitoring for related changes in ocean water quality was conducted for this project in accordance with Coastal Non-point Source Pollution Control Grant requirements. Sonoma County Regional Parks Department worked closely with the Department of Health Services to prepare a Quality Assurance Project Plan (QAPP). In this plan, ocean water samples were to be taken weekly at the Westside Boat Launch Ramp and the mud flats south of the Park. The sampling occurred one month before connection, during construction, and five months after connection to sewer. Monitoring included sampling the site shoreline before and after connection to sewer as identified in the Quality Assurance Project Plan (QAPP) and integrated into the goals of the Project Assessment and Evaluation Plan (PAEP). (See Exhibit A QAPP and Exhibit E PAEP)

Summary of Work Completed

Work Item	Items for Review #	Due Date	% Of Work Complete	Date Submitted
EXHIBIT A – SCOPE OF WORK				
1.0	QUALITY ASSURANCE PROJECT PLAN and MONITORING PLAN	--		
1.1	Quality Assurance Project Plan	Feb 2007	100%	Oct 2007
1.2	Monitoring Plan	Feb 2007	100%	Oct 2007
2.0	WORK TO BE PERFORMED BY GRANTEE	--		
2.1	Construction	--	100%	
2.1.3	As-Built Plans	Mar 2007	100%	Oct 2007
2.1.4	Notice of Completion	Mar 2007	100%	Oct 2007
2.2	Monitoring and Documentation	--	100%	
2.2.2	Photo Documentation (Pre, During, and Post)	Mar 2007	100%	Oct 2007
3.0	REPORTING	--		
3.1	Annual Progress Summary	Sep 2007	100%	Oct 2007
3.2	Draft Project Report	July 2007	100%	Oct 2007
3.3	Final Project Report	Aug 2007	100%	Dec 2007
EXHIBIT B – INVOICING, BUDGET DETAIL AND REPORTING PROVISIONS				
5.0	REPORTS	--		
5.1	Progress Reports by the twentieth (20 th) of the month following the end of the calendar quarter (March, June, September, and December)	Quarterly	100%	Oct 2007
5.2	Grant Summary Form	Day 90	100%	Oct 2007
5.3	Natural Resource Projects Inventory Project Survey Form	Before final invoice	100%	Oct 2007
EXHIBIT C – SWRCB GENERAL CONDITIONS				
6	Copy of Final CEQA/NEPA Documentation	Feb 2007	100%	Oct 2007
22	Signed Cover Sheets For All Permits	Feb 2007	100%	Oct 2007
EXHIBIT D – GRANT PROGRAM TERMS & CONDITIONS				
5	Monitoring and Reporting Plan	Feb 2007	100%	Oct 2007

And finally, project costs for April 21, 2005 to September 30, 2007 were:

1. Personnel Services (including benefits)	\$ 64,471
2. Professional and Contract Services (Sewer construction, engineering, Environmental documents and reports)	\$ 28,191
3. Construction Fees (Sewer connection Fees and construction permits)	\$887,983
Total	\$980,645

Conclusion

The project was effective in eliminating a source of surface and ground water pollution by connecting Westside Regional Park facilities to a public sewer system and controlling the potential for wastewater site pollution. Weekly water quality tests were conducted in attempt to quantify the impact. Results of the project site and AB 411 Campbell Cove monitoring reports are provided in Exhibit A-2.2.

Evaluation of the sampling conducted did show an increase in total coliform levels on four separate sampling dates. However, based upon these results the source of this pollution was undetermined. It was noted by the laboratory that a survey of field conditions is needed to supplement Bacteriological tests.

Two articles regarding sources of beach pollution are included in Exhibit E-8. These articles support the theory that the type of groundwater discharge occurring at Westside Regional Park prior to this project was indirectly or directly increasing the abundance of harmful bacteria at coastal beaches, due to the combination of nutrient high septic discharge into groundwater and fecal bacteria contamination.

Sonoma County Department of Health Services is awaiting the research results from County of Marin on Direct Rapid Pathogen Detection Based on Microbial Census and Phylochip Analysis, which is recommended for Prop 50 Clean Beaches Initiative funding. Health Services reports that Marin County's research may change how water quality sampling and beach closures are dealt with. In the meantime, Health Services will continue to monitor water quality at Campbell Cove. As part of its AB 411 beach monitoring program, Health Services will post the beach with warnings or closures based upon sampling results to advise the public to avoid contact with ocean water until water sampling meets State water quality standards.

For further information about this report, contact Elizabeth Tyree at Sonoma County Regional Parks Department, 707-565-2575. For further information about the construction project, contact Joe Kase, 707-565-6032.

Disclosure

Funding for this Project has been provided in full or in part through an agreement with the State Water Resources Control Board. The contents of this document do not necessarily reflect the views and policies of the State Water Resources Control Board, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

2 – Work Performed

2.2 – Monitoring and Documentation

2.2.1 Project Site Weekly Water Quality Test Results

2.2.2 Environmental Health Division – Ocean Bacteriological Monitoring Program (AB 411 report) for 2005 and 2006.

Weekly Water Quality Test Results

County of Sonoma Department of Health Services Public Health Laboratory

State Standards TC = Total Coliform: 1,000 per 100 ml.
 if Fecal/Total is > .1; 10,000 per 100 ml if Fecal/Total is < .1
 FC = Fecal Coliform: 400 per 100 ml
 ENT = Enterococcus: 104 per 100 ml
 NS = No Sample Taken

Sample Date	Westside Park North Dock #1			Boat	Westside Park South Gafney Point #2		
	TC	FC	ENT		TC	FC	ENT
Aug. 8, 2005	NS	NS	NS		20	10	NS
Aug. 22, 2005	31	<10	NS		NS	<10	NS
Aug. 30, 2005	20	<10	NS		41	41	NS
Sep. 07, 2005	31	<10	<10		<10	<10	<10
Sep. 12, 2005	20	<10	<10		<10	<10	<10
Sep. 19, 2005	NS	NS	<10		<1.0	<1.0	<10
Sep. 26, 2005	<10	<10	<10		<10	<10	10
Oct. 04, 2005	96	10	NS		134	63	<10
Oct. 17, 2005	2382	96	74		295	20	134
Oct. 10, 2005	171	20	85		<10	<10	<10
Oct. 31, 2005	226	10	20		41	<10	<10
Nov. 07, 2005	3448	31	97		41	<10	10
Nov. 14, 2005	41	NS	<10		52	NS	31
Nov. 21, 2005	74	30	<10		142	107	10
Nov. 27, 2005	NS	NS	NS		NS	173	223
Dec. 12, 2005	41	20	10		771	712	175
Dec. 27, 2005	8664	1076	NS		813	109	308
Jan. 30, 2006	NS	NS	10		NS	NS	<10
Feb. 21, 2006	10	<10	<10		<10	<10	NS
Mar. 20, 2006	<10	<10	<10		<10	<10	<10
Apr. 24, 2006	134	10	<10		NS	<30	30
May.15, 2006	30	<10	NS		4884	146	NS
Jun. 05, 2006	<10	<10	<10		<10	<10	<10

Environmental Health Division - Ocean Bacteriological Monitoring Program - Most Probable Number / 100 ml Sampling - 2006

	Gualala			Black Point			Stillwater			Goat Rock			Salmon Creek			Campbell Cove			Doran Park		
	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT
Oct 30	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	20	20	31
Oct 23	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	24,192	1,137	677	20	20	95
Oct 18																84	20	74			
Oct 16	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	801	402	359	<10	<10	<10
Oct 11																695	272	272			
Oct 9	108	<10	<10	<10	<10	<10	<10	<10	<10	158	98	<10	<10	<10	<10	2,143	906	2,909	109	10	63
Oct 2	10	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	6,488	3,076	1,092	10	<10	<10
Sep 25	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	723	350	85	40	<10	10
Sep 18	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	299	161	10	<10	<10	<10
Sep 11	<10	<10	<10	<10	<10	<10	<10	<10	<10	31	10	<10	<10	<10	<10	663	327	464	10	10	10
Sep 5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	97	10	74	10	10	<10
Aug 30																24,192	14,863	1,439	<10	<10	<10
Aug 28	20	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	359	240	262	<10	<10	480
Aug 21	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	87	10	52	<10	<10	<10
Aug 14	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	10	<10
Aug 7	10	<10	<10	<10	<10	<10	<10	<10	<10	10	<10	<10	<10	<10	<10	122	63	<10	<10	<10	<10
Jul 31	<10	<10	<10	<10	<10	<10	<10	<10	<10	31	20	<10	<10	<10	<10	41	<10	<10	NS	NS	NS
Jul 24	<10	<10	<10	<10	<10	<10	<10	<10	<10	160	<10	<10	<10	<10	<10	52	52	10	10	<10	<10
Jul 17	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Jul 10	10	<10	<10	<10	<10	<10	<10	<10	<10	31	<10	<10	<10	<10	<10	20	20	<10	10	10	<10
Jul 3	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	<10	<10
Jun 26	<10	<10	<10	<10	<10	<10	<10	<10	<10	20	<10	<10	<10	<10	<10	153	128	20	20	10	<10
Jun 19	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	<10	<10	<10	<10	<10	<10	<10	<10	10	<10	<10
Jun 12	10	<10	<10	<10	<10	<10	<10	<10	<10	10	10	<10	<10	<10	<10	41	41	41	<10	<10	<10
Jun 5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	2,909	195	20	<10	<10	<10
May 30	10	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	20	20	10
May 22	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	<10	<10	<10	<10	<10
May 15	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	2,098	909	520	10	<10	<10
May 8	426	<10	<10	<10	<10	<10	<10	<10	<10	41	31	<10	<10	<10	<10	20	20	<10	10	10	<10
May 1	<10	<10	<10	<10	<10	<10	<10	<10	<10	31	10	<10	<10	<10	<10	410	98	158	<10	<10	<10
Apr 24	122	<10	<10	<10	<10	<10	<10	<10	<10	85	10	<10	<10	<10	<10	1,401	253	41	10	10	10
Apr 17	228	<10	<10	<10	<10	<10	<10	<10	<10	218	41	<10	<10	<10	<10	278	187	30	98	63	<10
Apr 10	<10	<10	<10	<10	<10	<10	<10	<10	<10	309	52	<10	<10	<10	<10	906	480	4,106	10	10	<10

Environmental Health Division - Ocean Bacteriological Monitoring Program - Most Probable Number / 100 ml Sampling - 2005

	Gualala			Black Point			Stillwater			Goat Rock			Salmon Creek			Campbell Cove			Doran Park			
	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT	
Oct 31	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
Oct 24	<10	<10	<10	<10	<10	<10	10	<10	10	20	10	<10	10	<10	2,989	1,178	1,396	41	20	<10	<10	
Oct 19																						
Oct 17	20	10	20	52	31	10	20	<10	10	<10	<10	<10	<10	84	73	41	121	109	213	<10	<10	
Oct 10	74	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	5,475	3,448	985	31	<10	<10	<10	<10	
Oct 3	<10	<10	<10	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	213	120	85	<10	<10	<10	<10	<10	
Sep 26	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	98	41	31	<10	<10	<10	<10	<10	
Sep 19	10	10	<10	<10	<10	<10	20	<10	10	10	<10	10	<10	677	471	213	10	<10	<10	<10	<10	
Sep 12	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	31	20	135	<10	<10	<10	<10	<10	
Sep 8														6,488	1,126	844						
Sep 6	<10	<10	<10	<10	<10	<10	20	<10	10	10	<10	<10	<10	1,782	1,439	754	<10	<10	<10	<10	<10	
Aug 29	<10	<10	<10	<10	<10	<10	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
Aug 22	10	10	<10	10	<10	<10	10	<10	<10	10	10	<10	<10	199	60	31	<10	<10	<10	<10	<10	
Aug 15	<10	<10	<10	<10	<10	10	<10	<10	20	<10	<10	<10	<10	85	41	<10	10	<10	<10	<10	<10	
Aug 8	10	10	<10	<10	<10	<10	10	<10	<10	20	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
Aug 2	<10	<10	<10	20	<10	<10	31	31	41	<10	<10	<10	4,106	131	31	20	10	<10	<10	20	<10	
Jul 26	<10	<10	<10	10	<10	<10	20	<10	<10	10	<10	<10	146	<10	<10	20	<10	<10	<10	<10	<10	
Jul 18	<10	<10	<10	<10	<10	<10	85	<10	<10	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
Jul 11	30	10	20	<10	<10	<10	<10	<10	<10	10	<10	<10	10	<10	<10	<10	<10	<10	<10	<10	<10	
Jul 5	41	10	<10	<10	<10	<10	41	<10	10	30	20	10	10	<10	86	86	10	<10	<10	<10	<10	
Jun 27	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
Jun 20	<10	<10	<10	<10	<10	<10	41	<10	<10	<10	<10	<10	41	10	<10	63	10	31	10	10	<10	
Jun 13	122	10	10	10	<10	<10	62	<10	<10	10	<10	<10	148	10	<10	<10	<10	<10	<10	<10	<10	
Jun 6	10	<10	<10	<10	<10	<10	41	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
May 31	<10	<10	<10	<10	<10	<10	404	<10	<10	504	122	20	<10	<10	189	20	<10	<10	<10	<10	<10	
May 23	160	<10	<10	31	<10	<10	63	<10	<10	504	20	<10	146	<10	<10	10	10	<10	<10	<10	<10	
May 16	<10	<10	<10	<10	<10	<10	52	<10	<10	10	<10	<10	657	160	20	<10	<10	<10	<10	<10	<10	
May 11													74	<10	<10							
May 9	31	<10	<10	52	10	<10	809	86	20	528	30	10	>24,192	1,918	1,664	185	121	63	20	<10	<10	
May 2	10	<10	<10	<10	<10	<10	20	<10	10	<10	<10	<10	435	122	41	10	<10	20	<10	<10	<10	
Apr 25	10	10	<10	<10	<10	<10	158	10	<10	10	10	<10	<10	<10	185	171	86	10	10	10	10	
Apr 20													<10	<10	<10							
Apr 18	<10	<10	<10	10	<10	<10	41	<10	<10	52	10	<10	988	189	364	10	<10	10	52	<10	<10	

Project Assessment and Evaluation Plan (PAEP)

Project Assessment and Evaluation Plan (PAEP)
Beneficial Use Improvement and Protection

Westside Regional Park Sewer System Improvement Project

I. Project Summary

- A. Funding Program: *The project is supported by the Proposition 13 Coastal Nonpoint Source Pollution Control Grant Program, and other local, State, and Federal matching funds.*
- B. Project Description: *The County installed a sewer connection to the Bodega Bay Public Utility District sewer system to replace an existing septic system. The Health Department encouraged the county to connect to the site public sewer systems to eliminate the potential contamination of groundwater. Ocean water quality at Westside Park was studied during and after the project to identify if there is a link between Westside Regional Park and the high levels of fecal bacteria contamination found adjacent to the project site in the beach sediments at Campbell Cove Beach.*
- C. Problem Statement:
- i. Identify or characterize baseline data. *Weekly ocean water quality sampling is conducted by the County Health Department adjacent to the project site at Campbell Cove Beach between April 1 and October 31. Weekly Water Quality Test Results are posted on their web site at http://www.sonoma-county.org/health/eh/ocean_testing.htm. Sonoma County Regional Parks Department worked closely with the Department of Health Services to monitor the shoreline in front of the park for fecal bacteria contamination site.*
 - ii. Identify one or more sources of pollution: *Sewage runoff and ground water pollution.*
 - iii. Identify the proposed restoration activities: Best Management Practices (BMPs); pollution reduction and prevention activities. *Installation of a sewer connection to the Bodega Bay Public Utility District sewer system to replace an existing septic system.*
 - iv. Describe the manner in which BMPs are proposed to be implemented. *Connection to sanitary sewer system.*
 - v. Summarize how the effectiveness of project implementation will be measured. *The effectiveness of the project was measured by evaluating the success of the sewer connection and the effect on ocean water quality. Ocean water samples were taken weekly at the on site Westside Park Boat Launch Ramp and the mud flats south of the project site. This sampling occurred one month before connection, during construction, and five months after connection to sewer. Bacterial monitoring for total coliforms and E. coli will be used to determine if the failing septic system at Westside Regional Park is impacting the bay. If test*

results were proven to be negatively significant then government agencies, interested parties, and News Media would be notified when a beach is to be posted or closed.

D. Project Activities or Tasks: *Elimination of a potential contamination of groundwater by connecting restrooms and dump station to a sanitary sewer system.*

E. Category of Project Activities or Tasks:

Task 1: *Prepared Sewer connection Feasibility Study.*

Task 2: *Obtained necessary permits and environmental clearance.*

Task 3: *Prepared a Quality Assurance Project Plan (QAPP) detailing implementation and monitoring plan outlining water quality sampling monitoring, analysis, location, timing, statistical analysis, etc.*

Task 4: *Installed sewer connection.*

Task 5: *Monitored water quality for five months after connection to sewer.*

Task 6: *Prepared a final report detailing project success and failures.*

II. Project Goals & Desired Outcomes:

The goals of this project are:

1. *Eliminate the potential contamination of groundwater and surface water from the site septic systems.*
2. *Provide a sanitary system for sewage disposal.*
3. *Improve area water quality for public health and safety protection.*
4. *Identify improvements to park facilities that are sensitive to the unique coastal environment.*

The desired outcome of this project are:

1. *Reduce water pollution from sewage contamination.*
2. *Increase the efficiency of sewer system operation.*
3. *Monitor water quality field conditions as needed to supplement bacteriological tests and identify solutions to coastal water pollution.*
4. *Provide park improvements that protect or restore coastal water quality, minimize impacts on surrounding area environments, and blend well with the natural landscape character of the site.*

III. Project Performance Measures Table

See Table 1: Project Performance Measures for Beneficial Use Improvement and Protection

Table 1
Project Performance Measures for Beneficial Use Improvement and Protection
Westside Regional Park Sewer System Improvement Project

Project Goals	Desired Outcomes	Output Indicators	Outcome Indicators	Measurement Tools and Methods	Targets
Eliminate the potential contamination of groundwater and surface water from the site septic systems	Reduce water pollution from sewage contamination.	No failing septic system smell of ponding water.	Improvements in groundwater quality	County Health Department Water Quality Test Results http://www.sonoma-county.org/health/eh/ocean_testing.htm .	Increased groundwater and surface water quality.
Provide a sanitary system for sewage disposal	Increase the efficiency of sewer system operation.	Increase sewage disposal capacity.	1. Increase in number of park users.	Monitor sand maintain sewer system operation.	Elimination of sewage spills / overflows
Improve area water quality for public health and safety protection.	Monitor water quality field conditions as needed to supplement bacteriological tests and identify solutions to coastal water pollution.	Reduced ground water shoreline water pollution	1. Cleaner beaches and water conditions	Provide field measurements and observations by County staff and volunteers. Contact Sonoma county Health Services Department at (707) 565-4400 for more information.	Increased public health and safety protection.
Identify improvements to park facilities that are sensitive to the unique coastal environment.	Provide park improvements that protect or restore coastal water quality, minimize impacts on surrounding area environments, and blend well with the natural landscape character of the site.	1. Number of people using beach. 2. Improvements in water quality.	1. Shore fishing and tourism increases. 2. Increase in Number and types of plants and animals.	Increase in site visitor counts.	1. Increase in number of park users. 2. Improvement in park facilities