

RECLAMATION

Managing Water in the West

San Luis Drainage Feature Re-Evaluation

Salinity Issues in the San Joaquin Valley
SWRCB Workshop January 31, 2006

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South Central California Area Office – Fresno

Project Website: www.usbr.gov/mp/sccao/sld/index.html



U.S. Department of the Interior
Bureau of Reclamation

Overview

- **Project Purpose/ Background**
- **San Luis Drainage Feature Re-evaluation (SLDFR)
Draft EIS Alternatives**
- **Schedule, Current Activities**

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Project History

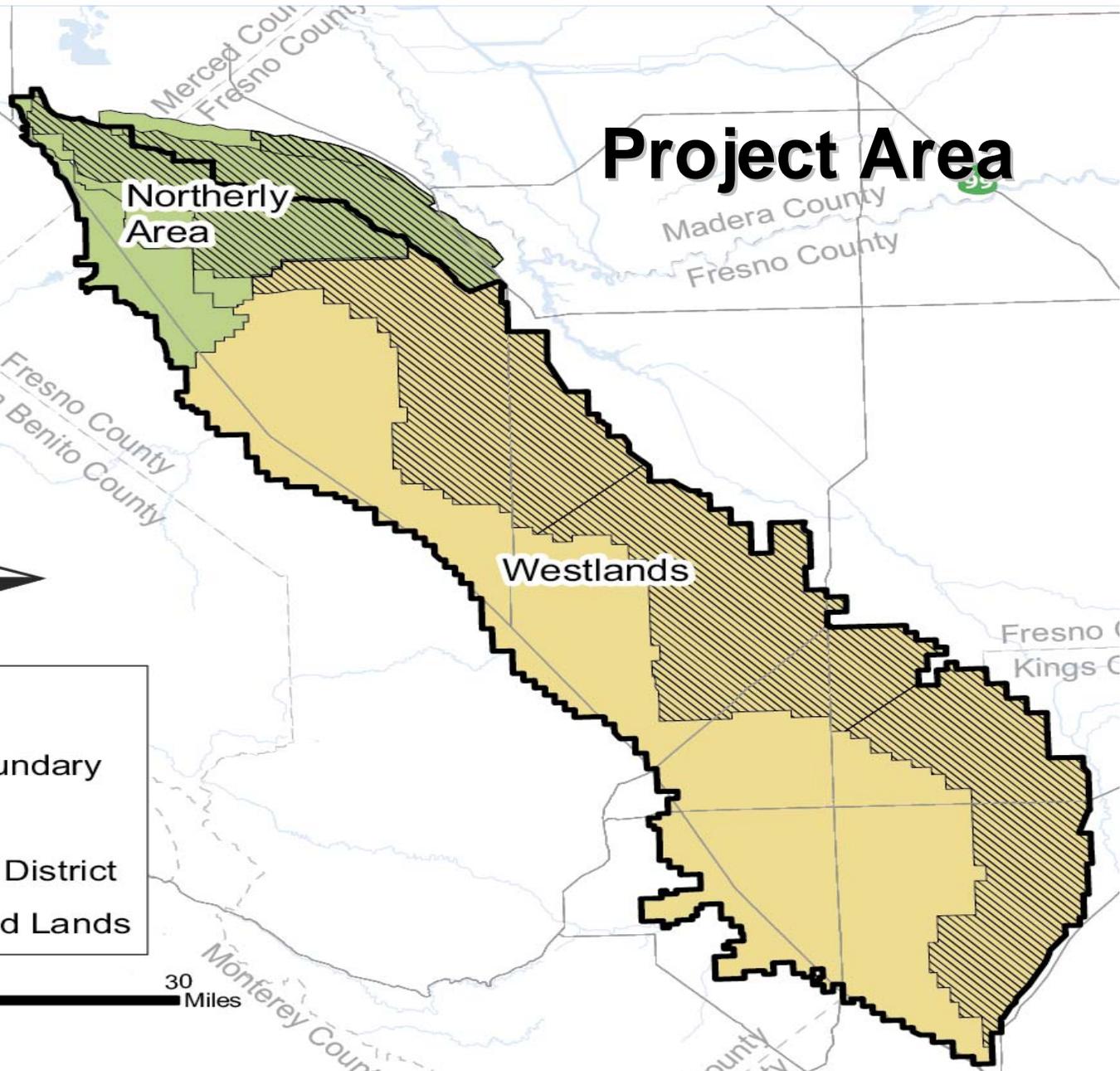
- **1960** San Luis Act
- **1968-75** San Luis Drain Partial Construction
- **1983-85** Selenium Toxicity at Kesterson
- **1992-95** Sumner-Peck Litigation and Judgment
- **2000** U.S. Court of Appeals Judgment
- **2001** Plan of Action
- **2002** Plan Formulation Report
- **2004** Amended Plan of Action for Land Retirement
- **2005** Draft Environmental Impact Statement

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COURT ORDER

- *Department of the Interior. . .shall without delay, provide drainage to the San Luis Unit, pursuant to the statutory duty imposed by section 1(a) of the San Luis Act.”*
- The Secretary has **discretion** to determine:
 1. Which lands need drainage to maintain arability of the soil
 2. The size of drainage facilities needed to meet the drainage requirement
 3. Approach for treating and disposing drain water

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Project Area

Northerly Area

Westlands

Westlands Water District: a total of 604,000 acres with 298,000 needing drainage service
 Northerly Area: a total of 126,000 acres with 81,000 needing drainage service

Project Goals/Criteria

- **Drainage service be a complete solution**
 - Identify required measures/facilities
 - Consider water production through disposal
- **Drainage service must be technically proven and cost effective**
- **Drainage service must be provided in a timely manner**
- **Drainage service should minimize adverse environmental effects and risks**

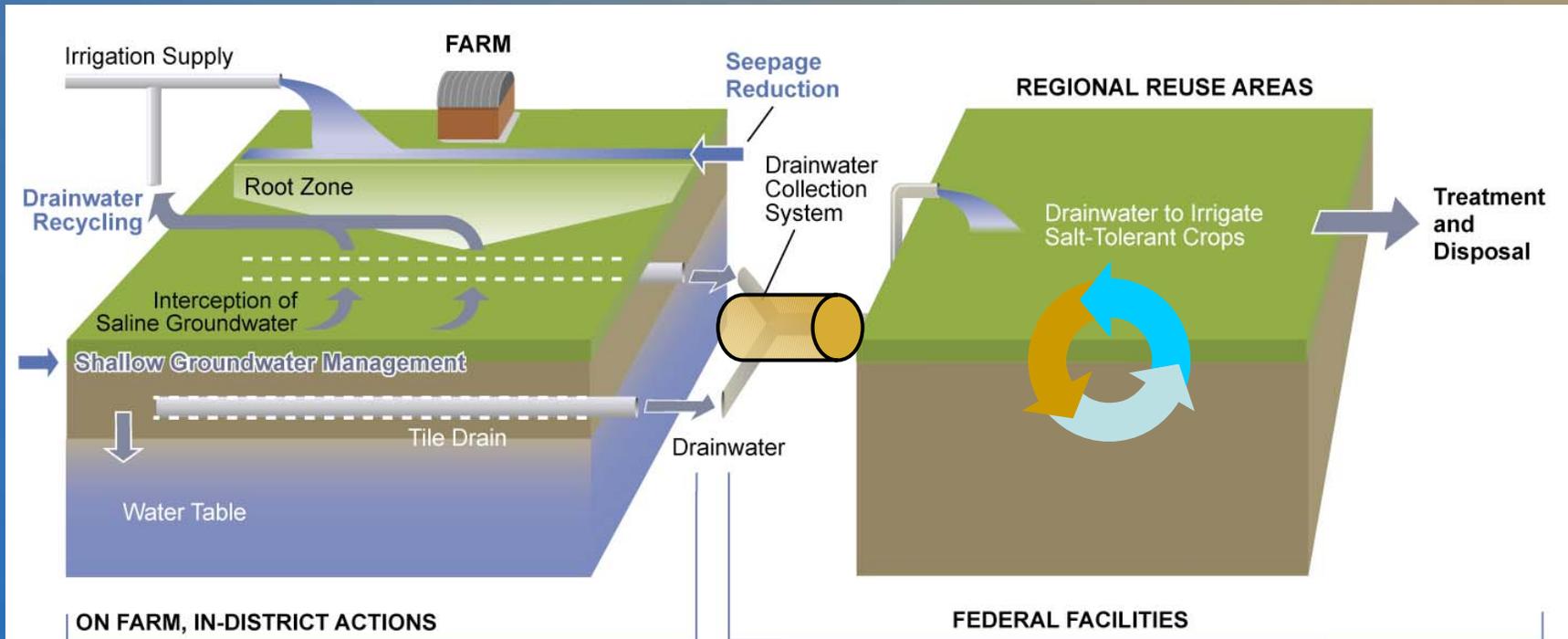
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Alternatives Evaluated

- **No Action Alternative**
 - No Federal action
- **In-Valley Alternatives**
 - In-Valley Disposal - no additional land retirement
 - In-Valley Groundwater Quality - retire “Hotspots”
 - In-Valley Water Needs - retire to meet water needs
 - In-Valley Drainage-Impaired - retire all impaired lands in Westlands area
- **Out-of-Valley/Delta Disposal Alternatives**
 - Chipps Island Disposal
 - Carquinez Strait Disposal
- **Out-of-Valley/Ocean Disposal Alternative**
 - Point Estero

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Alternative Common Elements



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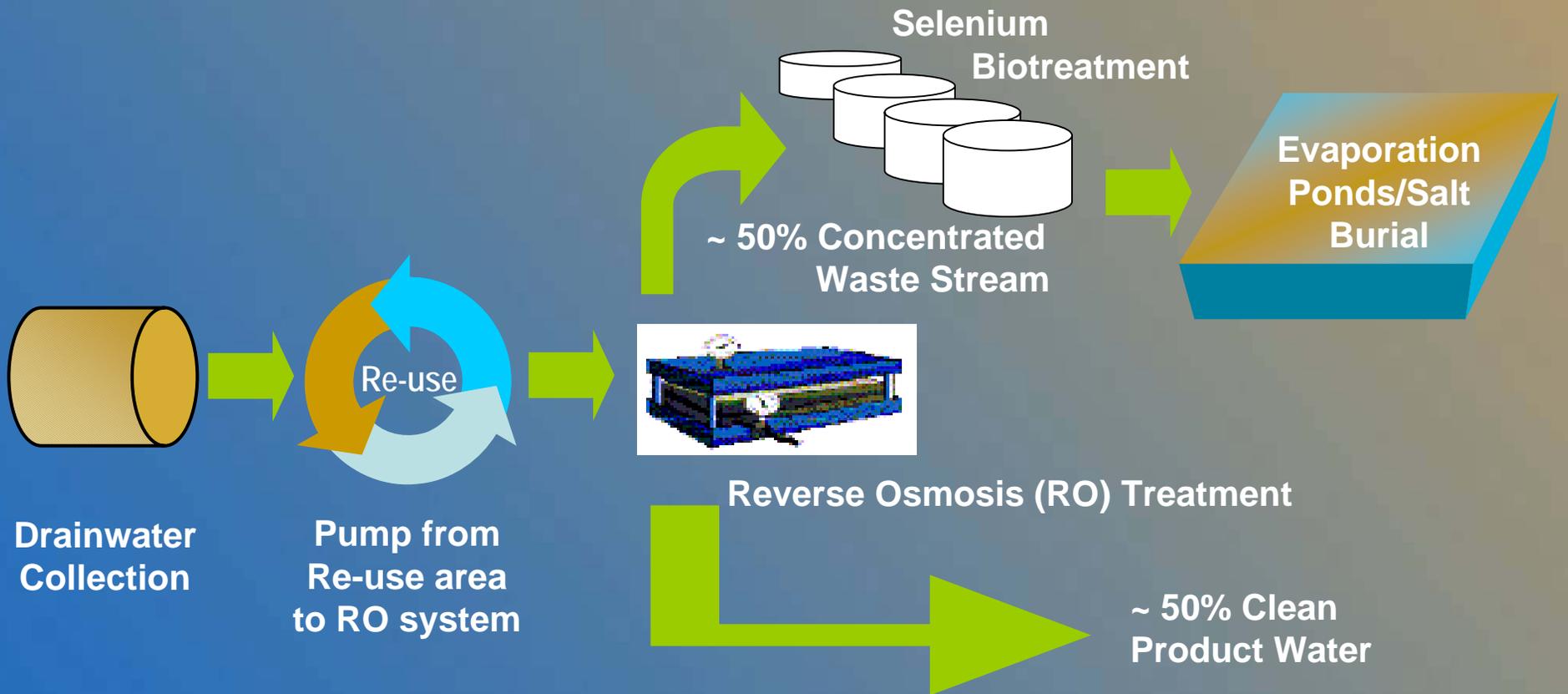
Average Annual Drainage Flows & Drainwater Reduction

Volume In Acre-Feet	In-Valley Full Drainage	Land Retirement Components			Out-of-Valley Ocean & Delta
		In-Valley Groundwater Quality	In-Valley Water Needs	In-Valley Drainage-Impaired Area	
Drainage flow without reduction	97,000	85,000	63,000	36,000	97,000
*Drainage flow with drainwater reduction	70,000	61,000	45,000	27,000	70,000
Drain flow with drainwater reduction and regional reuse facilities	21,000	18,500	14,000	8,100	21,000

*Includes, drainwater recycling, shallow groundwater management, and seepage reduction.

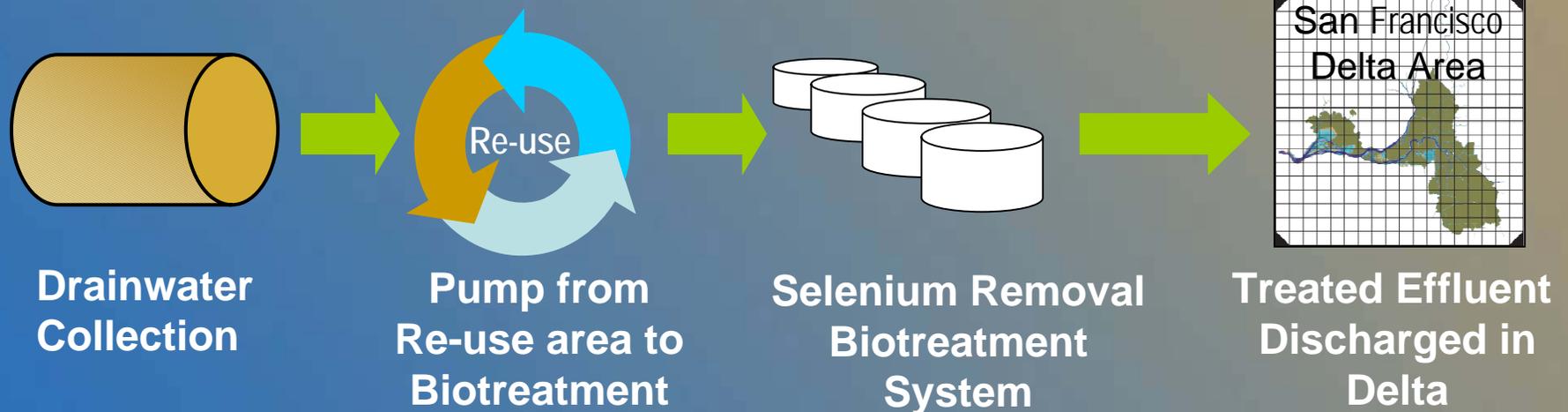
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In-Valley Disposal Alternatives



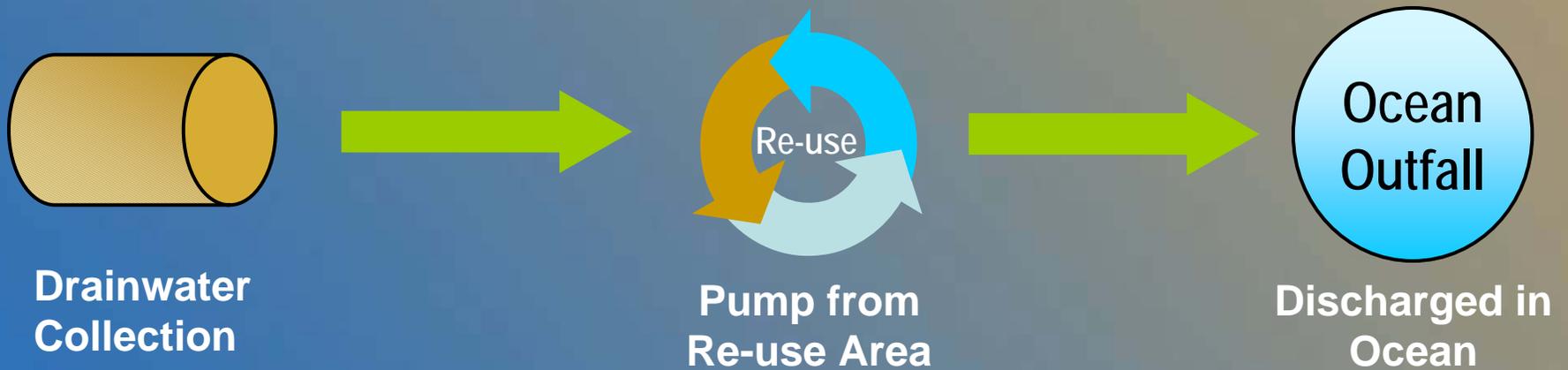
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Delta Disposal Alternatives



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Ocean Disposal Alternative



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Components of Alternatives

Alternative	*Acres Retired	Acres of Reuse	Reverse Osmosis	Selenium Treatment	Evaporation Ponds (ac)
No Action	44,100				
Out-of-Valley Delta	44,100	19,000		X	0
Out-of-Valley Ocean	44,100	19,000			0
In-Valley Full Drainage	44,100	19,000	X	X	3,290
In-Valley Ground Water	92,600	16,700	X	X	2,890
In-Valley Water Needs	194,000	12,500	X	X	2,150
In-Valley Drainage Impaired	308,000	7,500	X	X	1,270

*Assumes that retired agricultural lands would be fallowed or managed as dryland farming or grazing lands.

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Appraisal Level Cost Estimates (\$Million)

Alternative	Construction	Annual O, M & R	Present Worth	Annual Equivalent
In-Valley Full Drainage	607	19.8	562	33.8
In-Valley Groundwater Quality	676	18.1	626	37.6
In Valley Water Needs	828	15.1	773	46.5
In-Valley Drainage Impaired	918	10.9	857	51.6
Out-of-Valley Ocean Disposal	589	11.6	563	33.8
Out-of-Valley Delta Disposal Chipps Island	630	12.5	562	33.8
Out-of-Valley Delta Disposal Carquinez Strait	673	12.5	598	36.0

All Action Alternatives exceed the current authorized spending limit.

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Major Milestones



Interim Actions and Related Studies

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Current Work / Schedule

- **Draft EIS Public Review**
 - >1800 comments on Draft EIS
- **Continue Interim Actions and Related Studies, *including***
 - Grassland Bypass Project Support
 - Westside Regional Drainage Plan Support
 - RO pilot plant operation
 - Se Biotreatment pilot plant operation
 - Evaluate effluent Se speciation/bioaccumulation data
- **Feasibility Level Designs & Cost Estimates**
- **Final EIS and ROD – July 2006**

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Other Reclamation Projects

- **DMC Recirculation**
 - Gerald Robbins (916) 978-5061, grobbins@mp.usbr.gov
- **Frank's Tract Levee Restoration**
 - Sharon McHale (916) 978-5086, smchale@mp.usbr.gov
- **New Melones Revised Plan of Operation**
 - Michelle Light (916) 978-5196, mlight@mp.usbr.gov
- **South Delta Improvement Plan**
 - Sharon McHale (916) 978-5086, smchale@mp.usbr.gov
- **Upper San Joaquin River Storage Project**
 - Patricia Roberson (916) 978-5074, proberson@mp.usbr.gov

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Thank You

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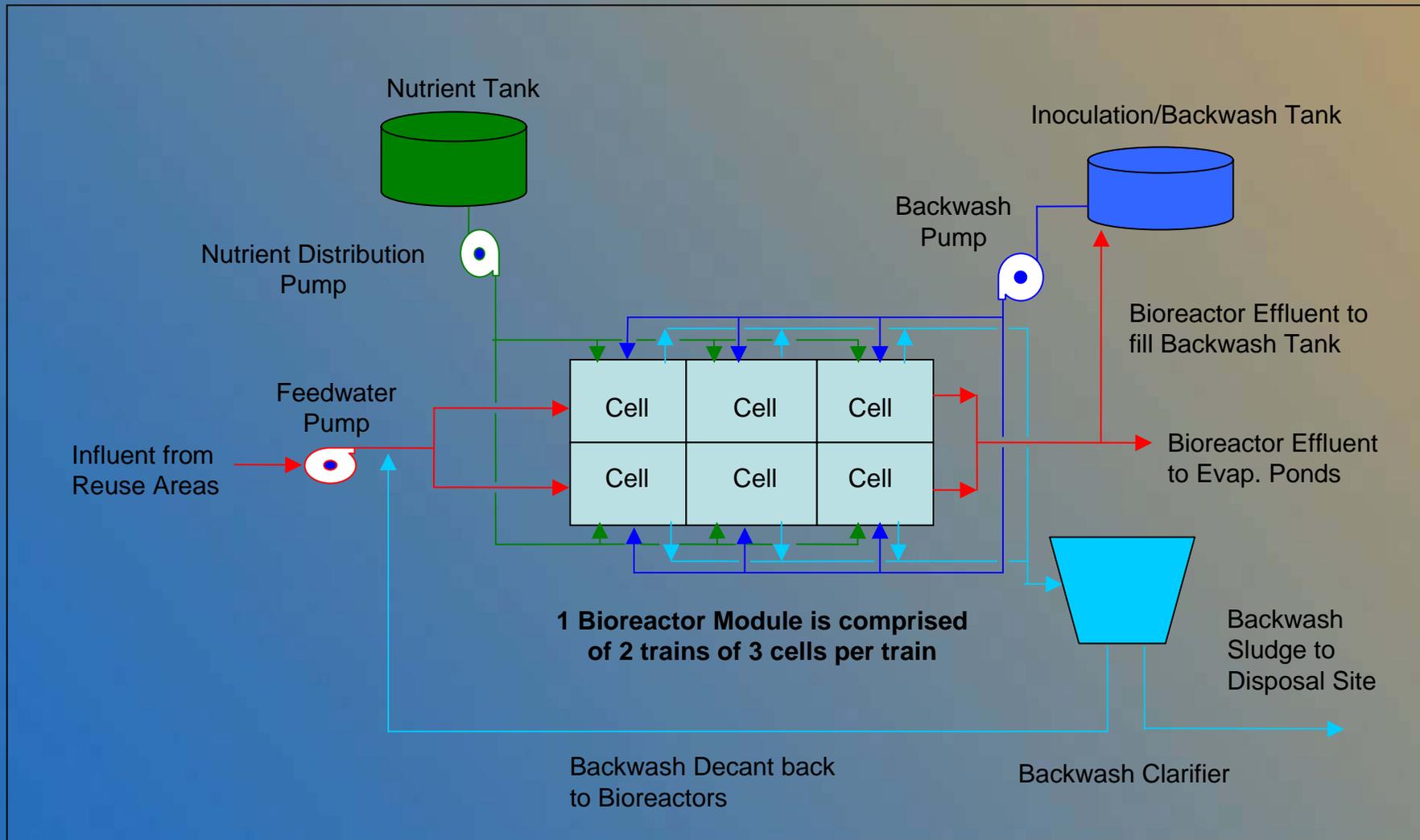
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EXTRA SLIDES



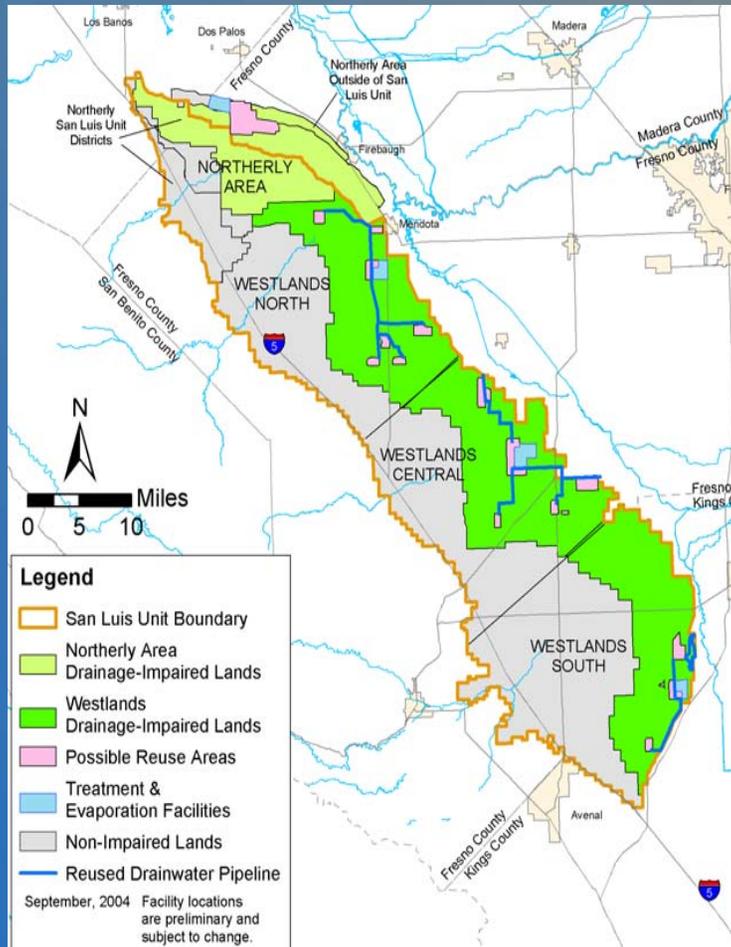
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Biotreatment Process Schematic



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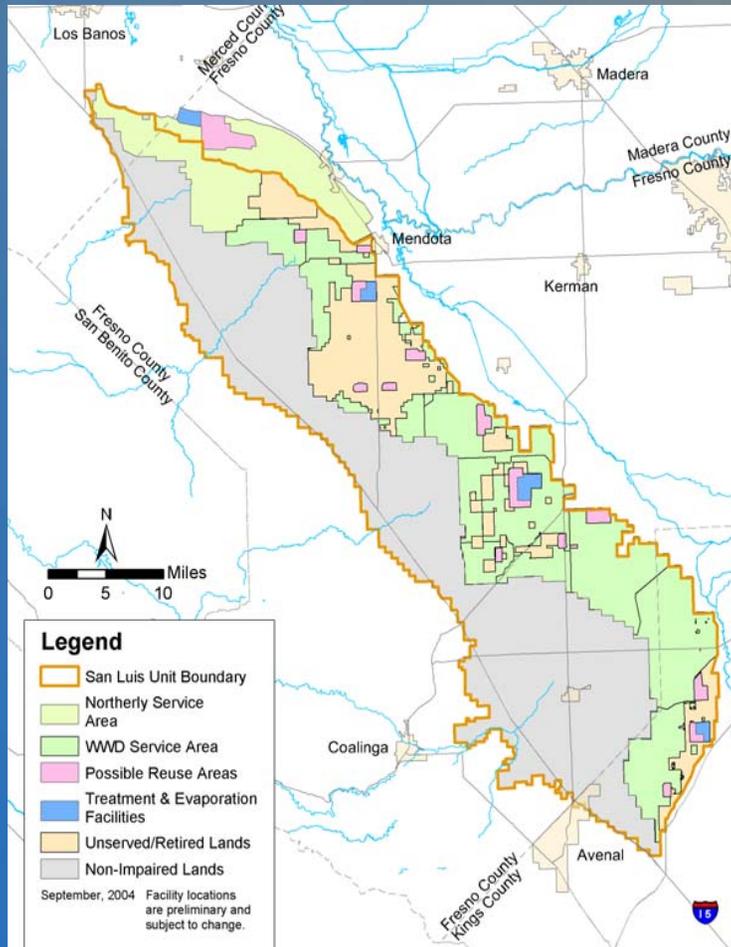
In-Valley Disposal Alternative



- Provide full drainage service
- Includes land retirement of 44,000 acres under CVPIA and lawsuit settlement and is included in all the alternatives

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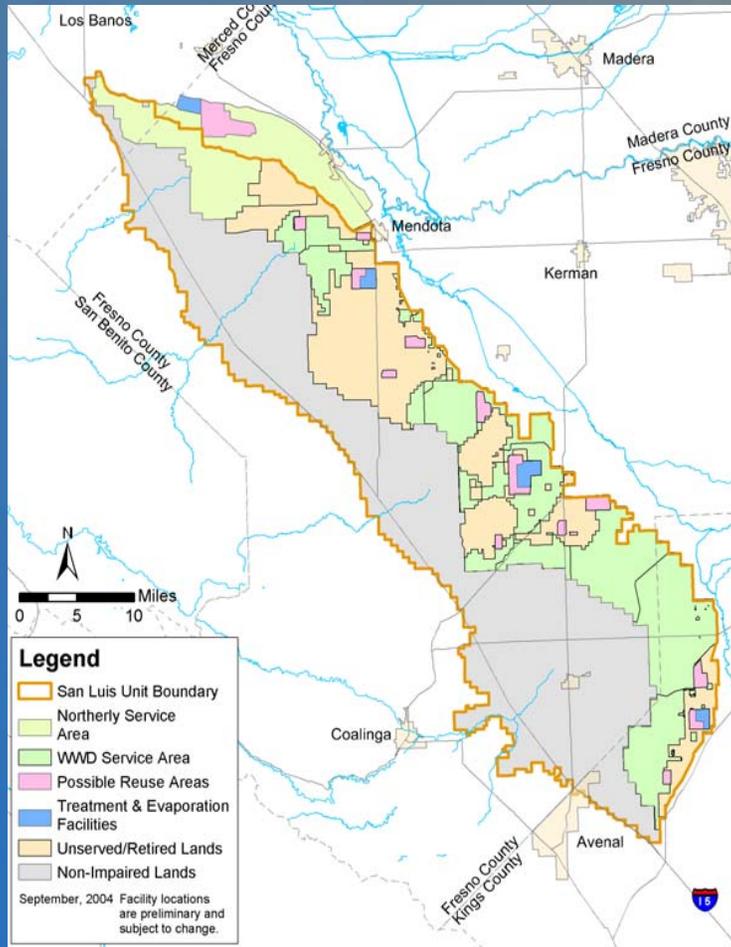
In-Valley Groundwater Quality Alternative



- Retire lands with $>50\mu\text{g/L}$ Se
- 93,000 acres retired

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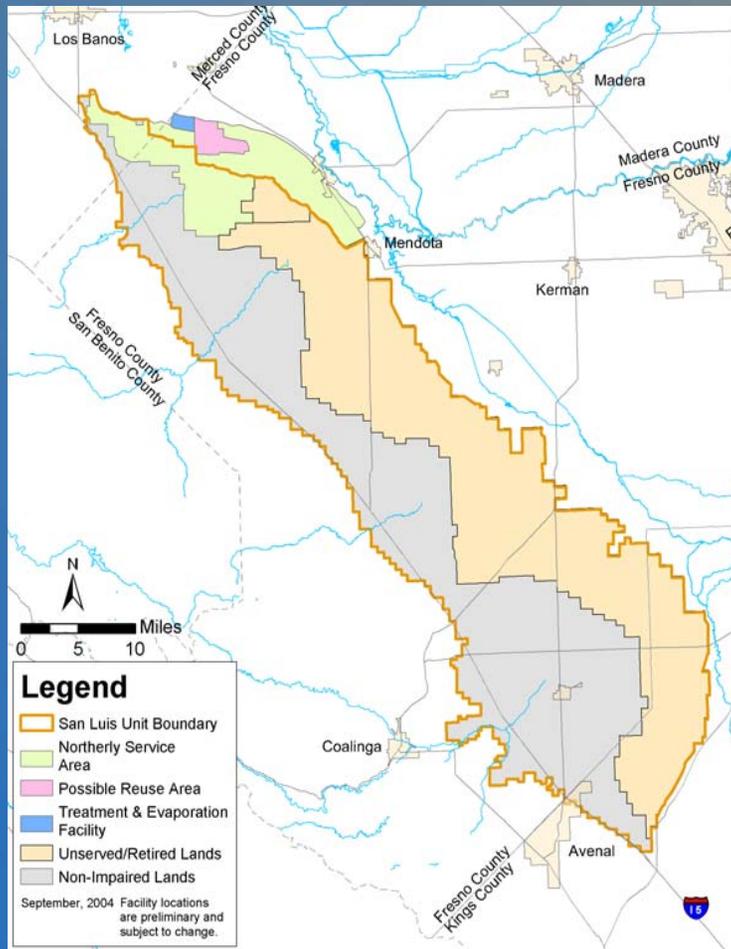
In-Valley Water Needs Alternative



- Retire lands $>20\mu\text{g/L}$ Se and balance water needs
- 190,000 acres retired

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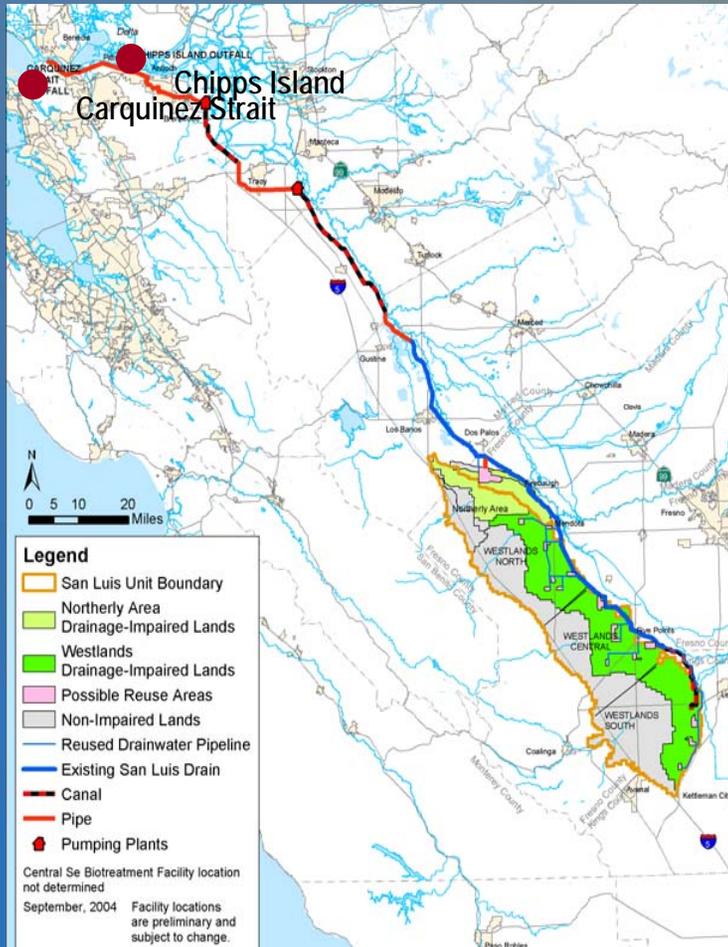
In-Valley Drainage-Impaired Alternative



- Retire all drainage impaired lands in Westlands
- 310,000 acres retired

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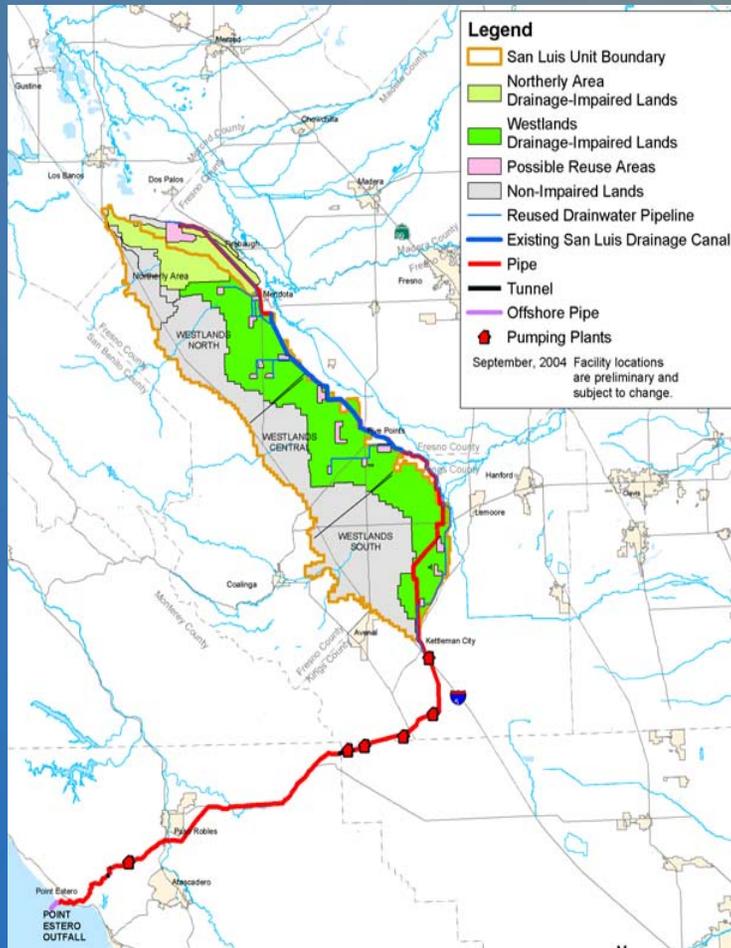
Out-of-Valley Delta Disposal Alternatives



- Two potential discharge locations:
 - Near Carquinez Strait
 - Chipps Island
- Includes the 44,000 acres retired

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Out-of-Valley Ocean Disposal Alternative



- Includes drainage collection and re-use facilities
- Discharge near Point Estero (Morro Bay)
- Includes the 44,000 acres retired

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Questions and Contacts

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