

Options to Address Potential Impacts to Robles Diversions



MATILIJA DAM
DAM REMOVAL PLANS AND SEDIMENT TRANSPORT ANALYSIS AND ROBLES DIVERSION MITIGATION



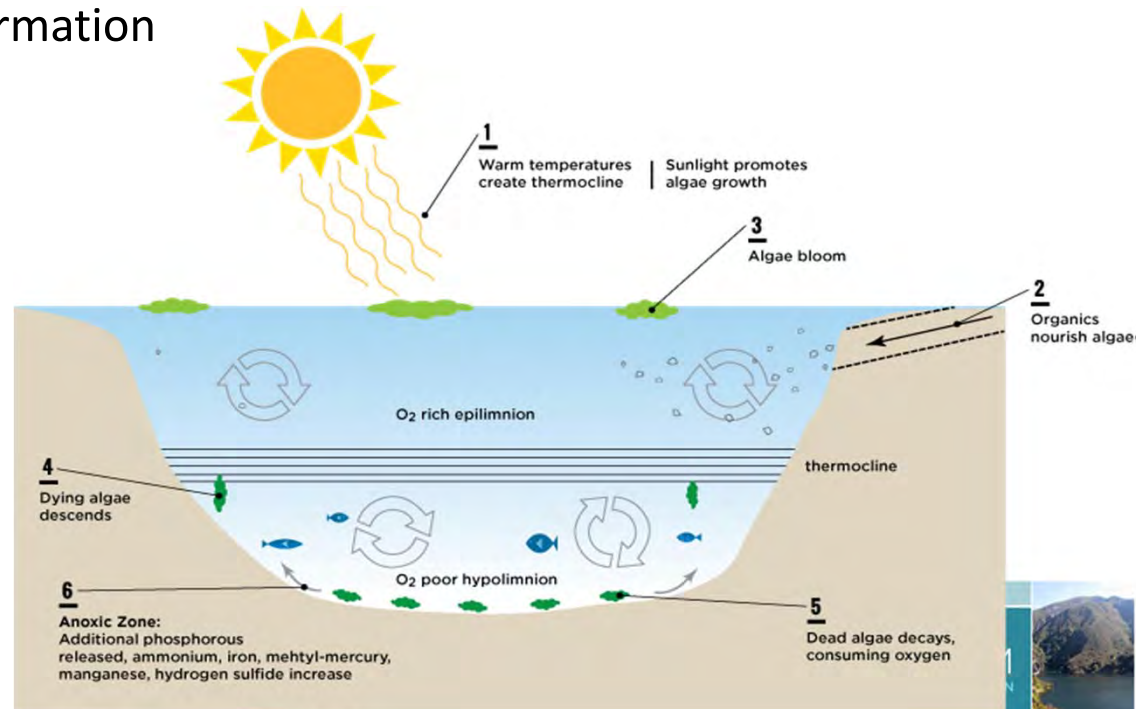
Dam Removal Initial Option Overview

- IO-05 (Temporary Upstream Disposal of Fine Sediment) & IO-06 (Downstream Slurry & Temporary Upstream Disposal of Fine Sediment)
 - Would limit fine sediment mobilization by removal and/or temporary stabilization
 - Results in relatively low impact to Casitas diversions at Robles
- IO-01 (Containment Berm with High Flow Bypass) through IO-04 (Gated Notches)
 - Would use storm flows to mobilize fine sediments (including organics) downstream
 - Results in potential impact to Casitas diversions



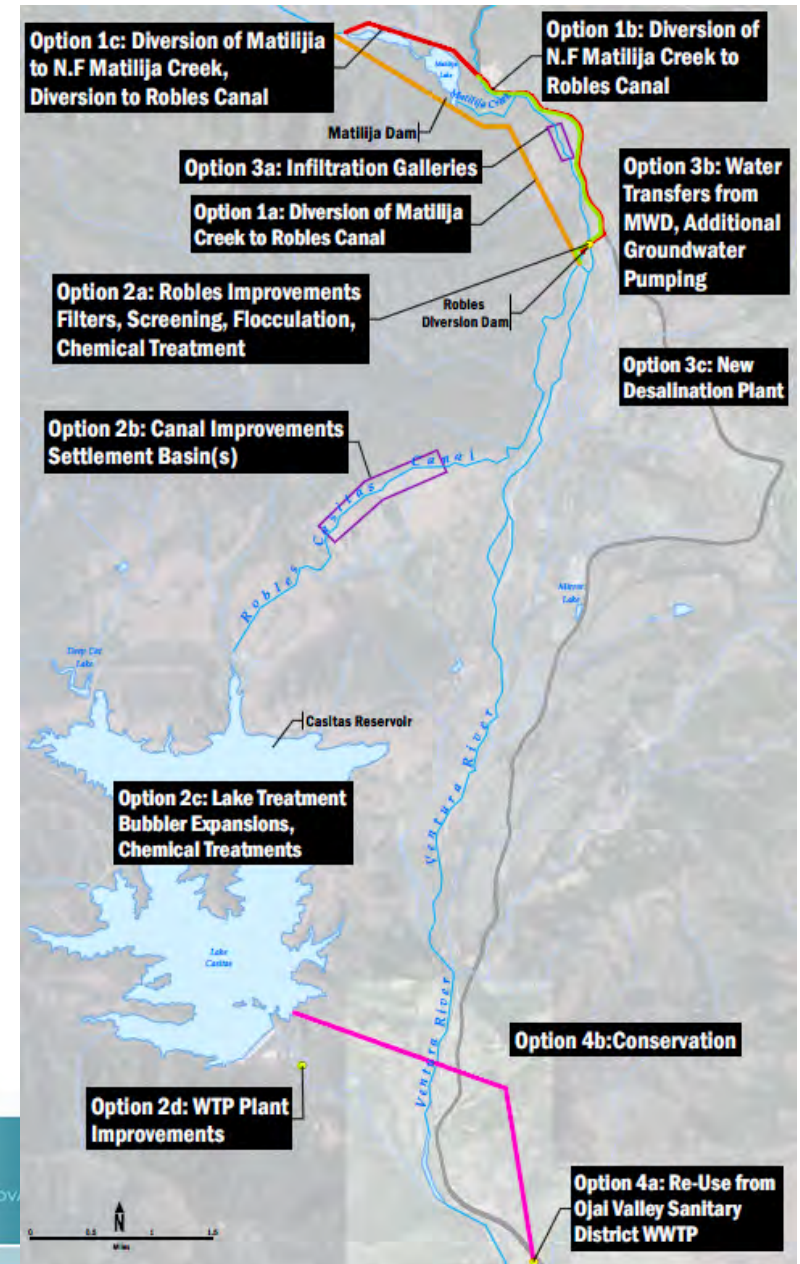
Accumulated Fine Sediment Mobilization

- Increased suspended sediment concentrations
 - Casitas has been able to divert during high suspended sediment concentrations (during large storm events)
 - Can lead to temporary increase in maintenance within canal or lake
- Increased organic material concentrations
 - Eutrophication, fish kill & formation of undesirable chemical compounds in Casitas
 - Undesirable tastes & odors in water supply
 - Increased treatment costs
 - Lake Casitas was recently treated with Pak27 and has employed an aeration system (2005)



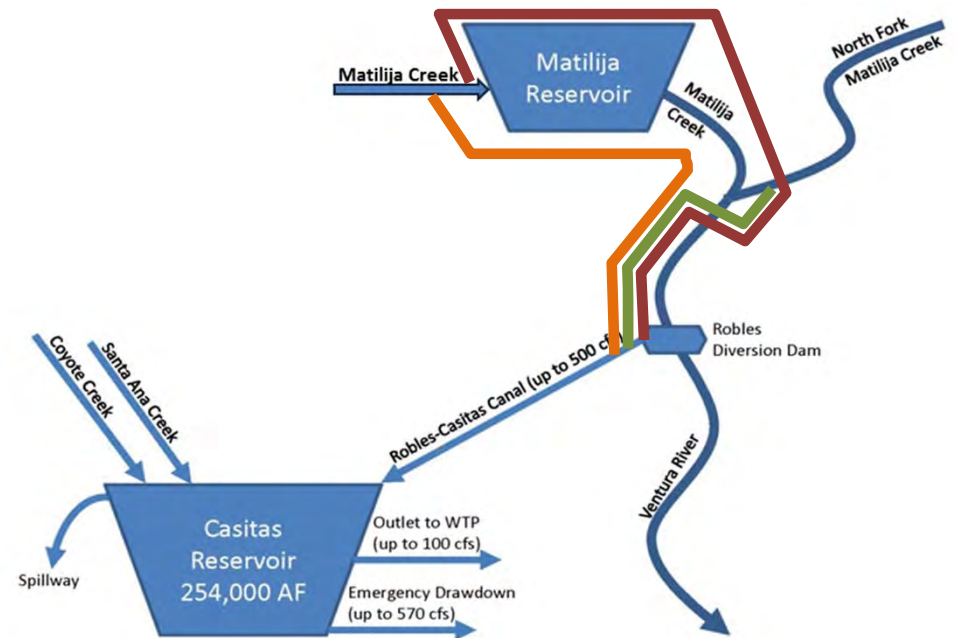
Options to Address Impact:

1. Diversion Replacement (full or partial)
 - a) Matilija Creek Diversion
 - b) NF Matilija Creek Diversion
 - c) Matilija Creek & NF Matilija Creek Diversion
2. Treatment Technologies
 - a) Modifications at Robles (add'l screening)
 - b) Modification of Robles-Casitas Canal (filtration, etc.)
 - c) Add'l Treatment at Lake Casitas
 - d) Add'l Treatment at WT Plant
3. Replacement Supply (full or partial)
 - a) Infiltration galleries
 - b) Water transfers
 - c) Desalination
4. Re-use & Conservation
 - a) Re-use/Recycling
 - b) Conservation



1. Diversion Replacement (full or partial)

- 1a: Matilija Creek Diversion to Robles-Casitas Canal ———
- 1b: NF Matilija Creek Diversion to Robles-Casitas Canal ———
- 1c: Matilija Creek Diversion to NF Matilija Creek Diversion to Robles-Casitas Canal ———



Pros:

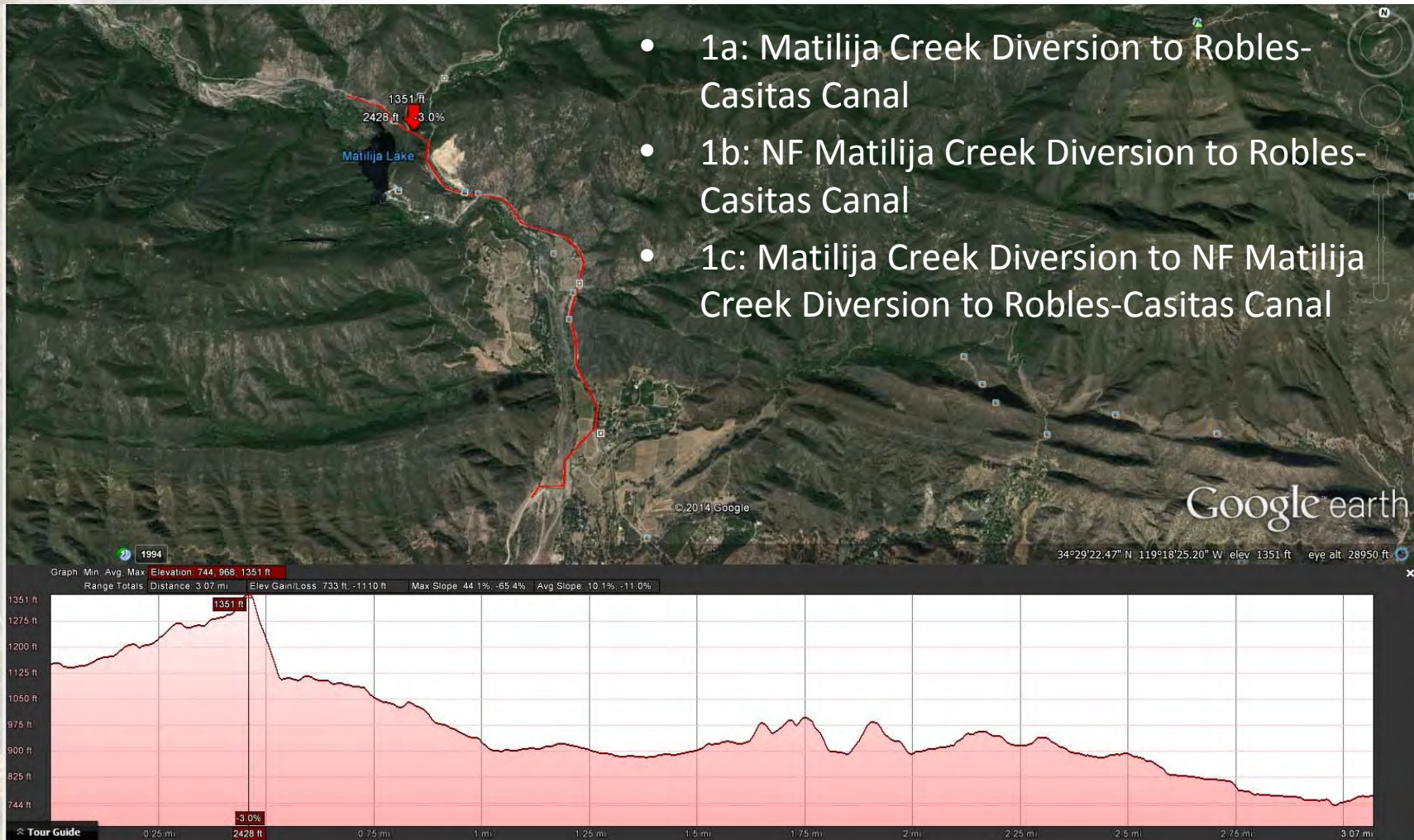
- No increase in fine sediment/organics to Lake
- Could fully replace potential lost diversion volume

Cons:

- High capital cost
- Potential conflict with some dam removal options (mobilization vs. diversion flow)
- Potential right-of-way issues
- Habitat impacts at new diversion

1. Diversion Replacement (full or partial)

- 1a: Matilija Creek Diversion to Robles-Casitas Canal
- 1b: NF Matilija Creek Diversion to Robles-Casitas Canal
- 1c: Matilija Creek Diversion to NF Matilija Creek Diversion to Robles-Casitas Canal



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2. Treatment Technologies

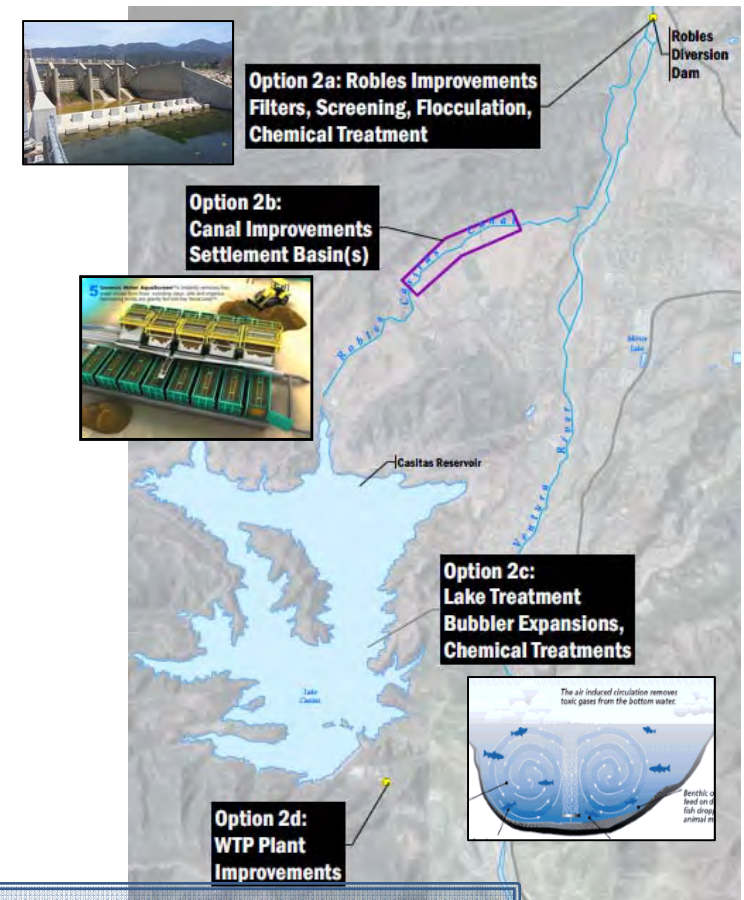
- 2a: Screening/filtration/ flocculation improvements at Robles
- 2b: Sedimentation/flocculation along Robles-Casitas Canal
- 2c: Additional Lake Casitas treatment (chemicals, aeration, etc.)
- 2d: Additional WTP Plant treatment

Pros:

- Long-term system improvements
- Potentially less expensive than some options
- No conflict with dam removal options
- Can be adaptively managed

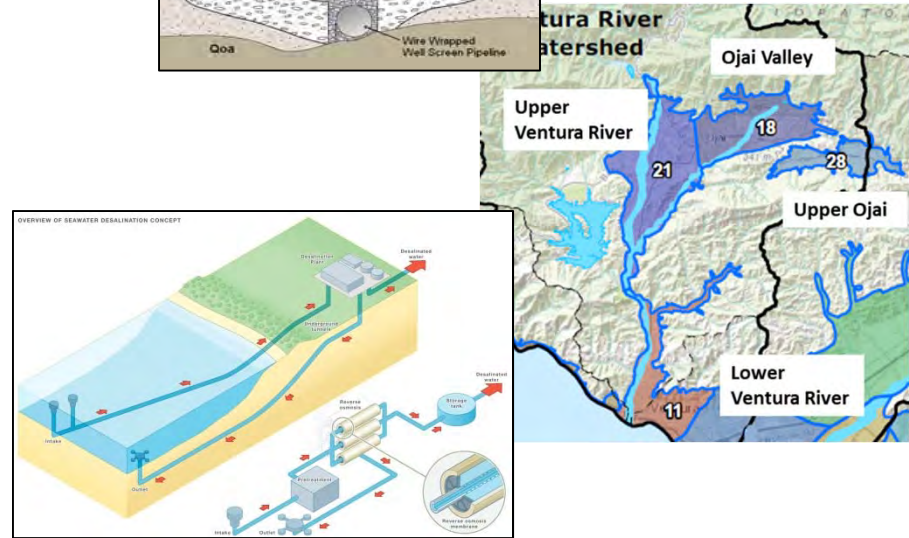
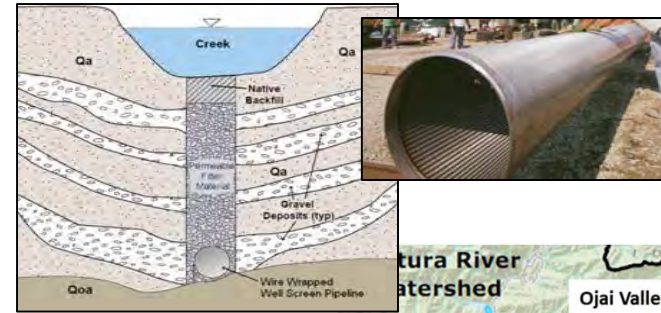
Cons:

- Secondary impacts from chemical treatment
- Potential right-of-way issues



3. Replacement Supply

- 3a: Infiltration galleries
- 3b: Water Transfers
 - Water transfers from MWD
 - Additional pumping from adjacent groundwater basins
- 3c: Desalination plant



Pros:

- Long-term system improvements (3a & 3c provide future system flexibility)
- No conflict with dam removal options
- Transfers can be adaptively managed

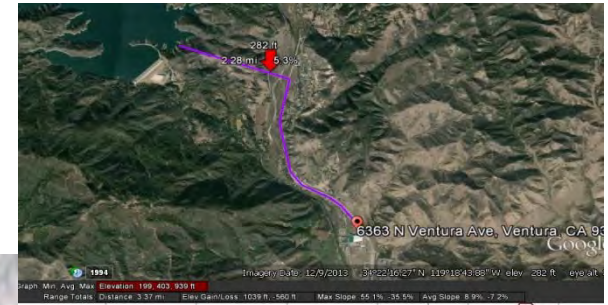
Cons:

- High cost
- Source availability (3b) not confirmed, and could be weather dependent
- Potential right-of-way issues



4. Re-use & Conservation

- 4a: Water re-use from WWTP
- 4b: Conservation
 - Fallowing
 - Rate re-structuring
 - Other conservation inducing measures



Pros:

- Long-term system improvements (provide future system flexibility)
- No conflict with dam removal options
- Environmentally friendly
- Bond Funding available
- Conservation can be adaptively managed

Cons:

- Rate structure viability not confirmed
- Limited re-use in summer
- Potential regulatory and/or public concerns/issues



Options Overview

ID	Options Description	No Additional Fines to Canal/Lake	Increases Long-term Supply	Improves Existing Infrastructure	Adaptive Management	Potential Cost
1a	Diversion from Matilija to Canal	✓				\$\$\$
1b	Diversion from NF Matilija to Canal	✓				\$\$\$
1c	Diversion from Matilija to NF Matilija to Canal	✓				\$\$\$\$
2a	Modifications at Robles Diversion			✓		\$\$
2b	Modifications at Robles-Casitas Canal			✓		\$\$
2c	Lake Treatment			✓	✓	\$\$
2d	WTP Improvements			✓	✓	\$\$
3a	Infiltration Galleries	✓	✓			\$\$
3b	Water Transfers	✓			✓	\$\$\$
3c	Desalination	✓	✓			\$\$\$\$
4a	WWTP Water Re-use	✓	✓	✓		\$\$
4b	Conservation	✓	✓	✓	✓	\$



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Next Steps

- Refine impact assessment
- Refine options to match specific alternative impacts
- Develop cost-effective combinations to address potential impacts

