

Ojai Valley Sanitary District (OVSD) Recycled Water Feasibility Study

Stakeholder Workshop



City of Ventura Corporation Yard

October 9th, 2014

Project Team



Carollo Engineers
Lydia Holmes

Carollo Engineers
Elisa Garvey

Carollo Engineers
Courtney Eaton

Best, Best, and Kreiger
Shawn Hagerty

Padre Associates
Matt Ingamells

Larry Walker Associates
Ashli Desai
Diana Engle

Hopkins Groundwater Consultants
Curtis Hopkins

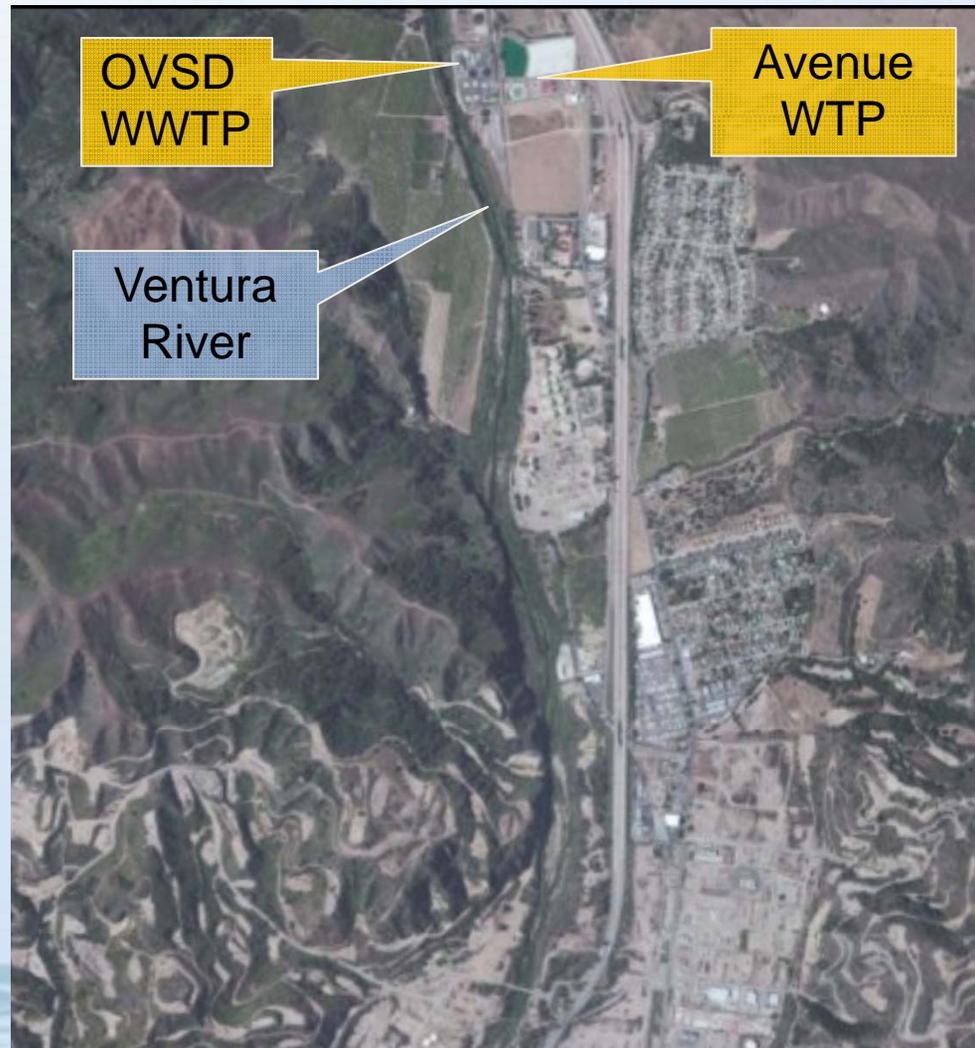
Meeting Agenda

Topic	Time
Introduction	8:00-8:05
Project Overview	8:05-8:40
Stakeholder Activity and Break	8:40-8:50
Discussion of Constraints	8:50-9:10
Recycled Water Alternatives	9:10-9:30
Discussion of Alternatives	9:30-9:50
Next Steps	9:50-10:00

Project Overview

Project explores feasibility of reusing the OVSD effluent

- Use of OVSD effluent by City of Ventura
 - Offset water demands
 - Provide new potable water supply

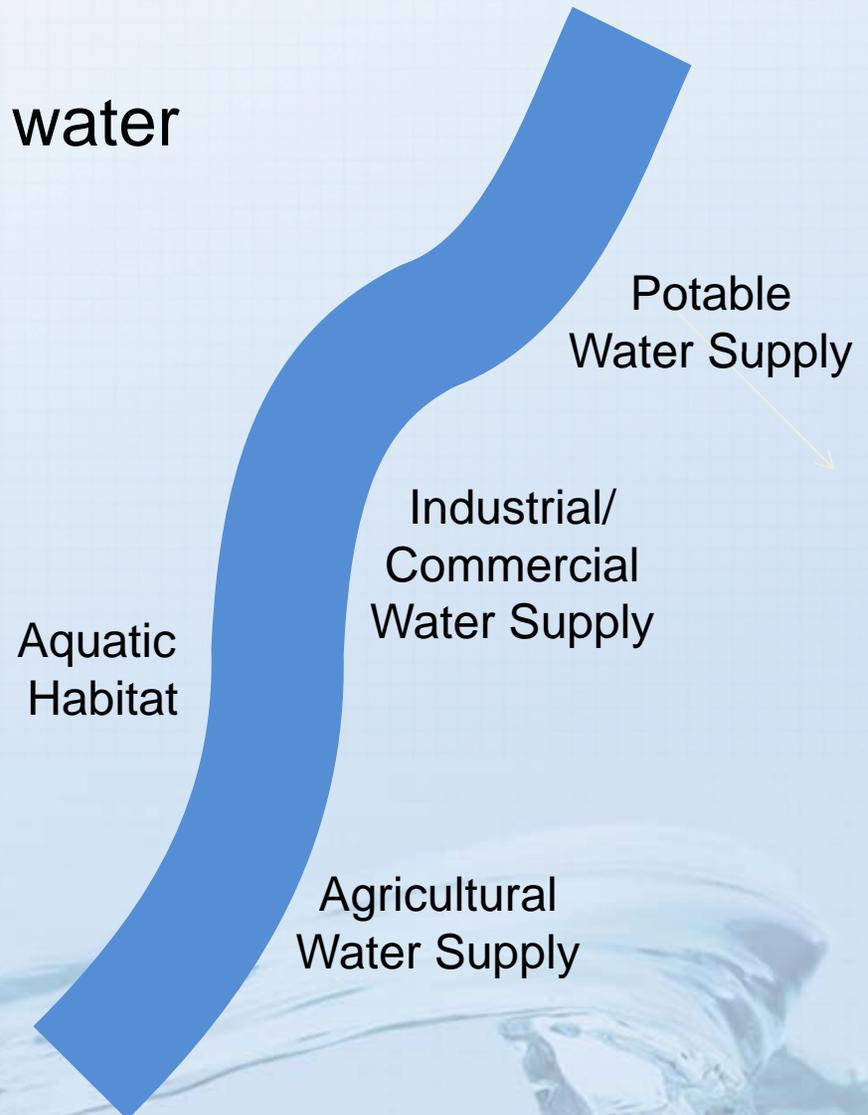


There are several project drivers for considering reuse of the OVSD effluent

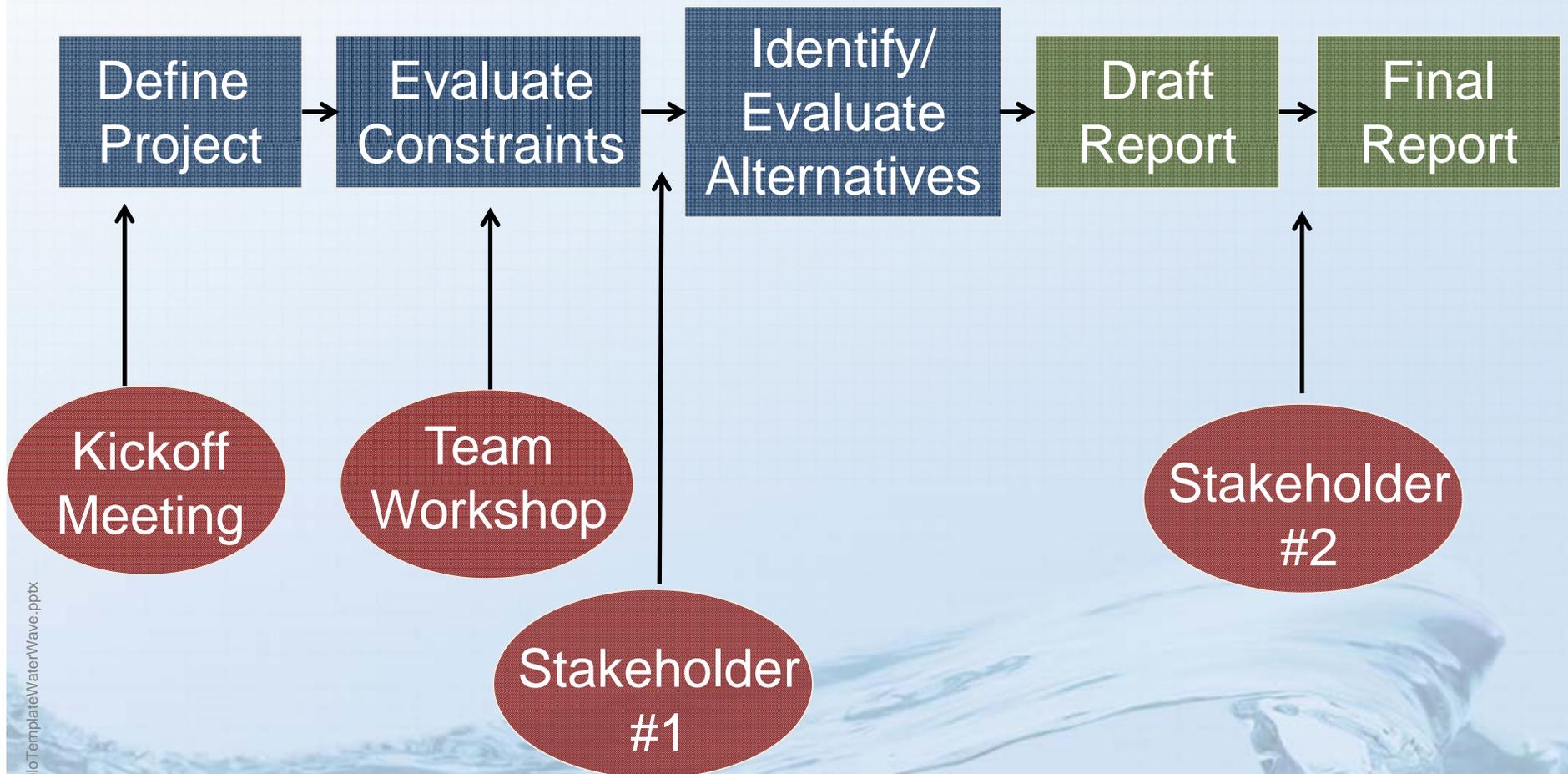


There are multiple objectives for the Feasibility Study

- Identify potential recycled water users and demands
- Establish the constraints on recycled water use
 - Environmental
 - Regulatory
 - Legal
- Explore opportunities for recycled water use within these constraints



Project Workflow



We are here to involve you in this process

What we want from you today...

- ✓ Listen
- ✓ Provide input on material presented today
- ✓ Provide input on future work



Background

Feasibility of reusing the OVSD effluent was evaluated in 2007

- Three recycled water alternatives considered
 - No Project
 - 50% effluent diverted for reuse
 - 100% effluent diverted for reuse

Nautilus Environmental

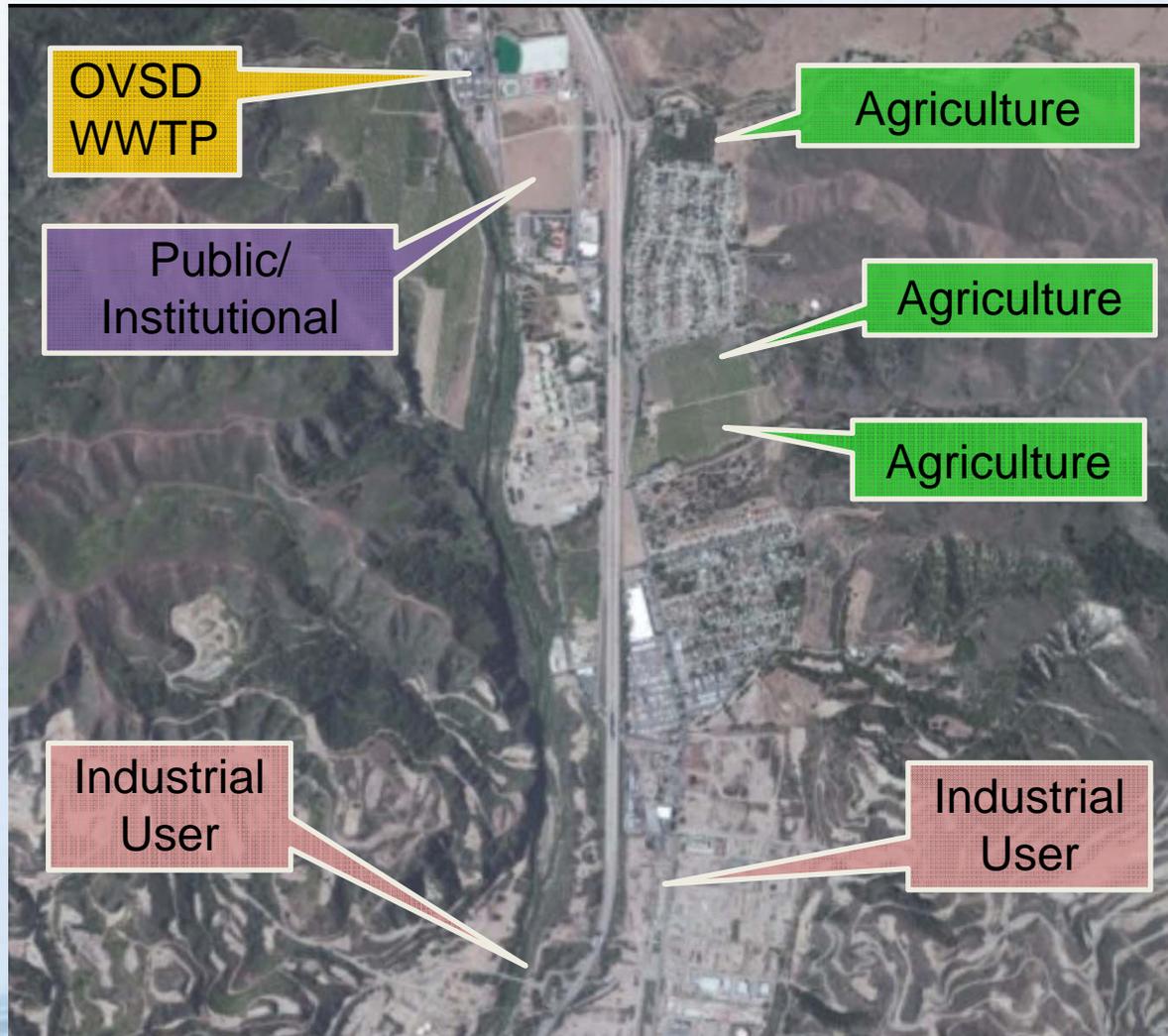
Feasibility Study on the Reuse of Ojai Valley Sanitary District Effluent- Final Facilities Planning Report

Provided to:
City of San Buenaventura
Public Works Department

Provided by:
Nautilus Environmental
Brown & Caldwell
Foothill Associates
KHE

September 21, 2007

2007 Study identified potential recycled water users



2007 Study assessed the environmental impact of OVSD effluent diversion

50% Effluent Diversion for Recycled Water Use



- Potential to mitigate environmental impacts
- Diversion Flows
 - 1.0 mgd max month / 1.75 mgd max day
 - Industrial use – 92% of max day demand

100% Effluent Diversion for Recycled Water Use

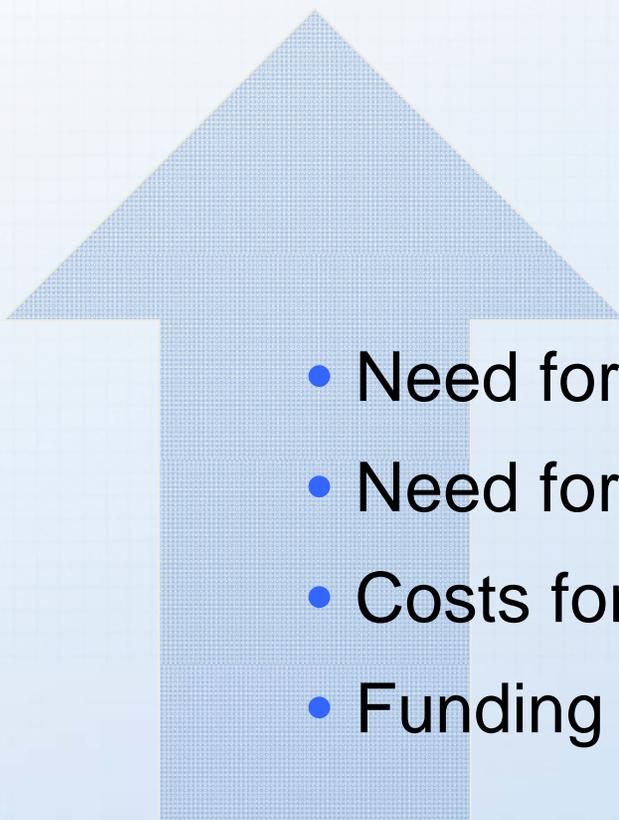


- Potential significant environmental impacts

Written letters from stakeholders opposed recycled water project

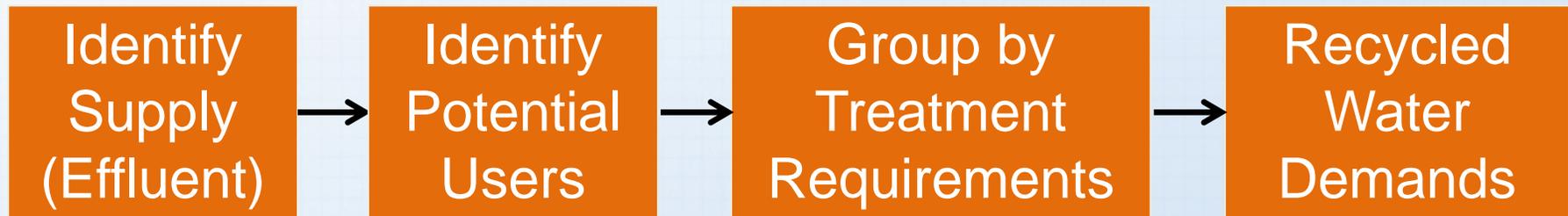
Agency	Use of effluent and cost	Consistency with NPDES permit	Evaluation of Steelhead impacts	Significance of change in river flow	Water Balance
OVSD Board of Supervisors	✓	✓		✓	✓
NMFS			✓		
Santa Barbara Channelkeeper	✓	✓	✓	✓	✓
Surfrider		✓	✓		
Stoecker Ecological			✓	✓	✓

The City is revisiting OVSD reuse because conditions have changed

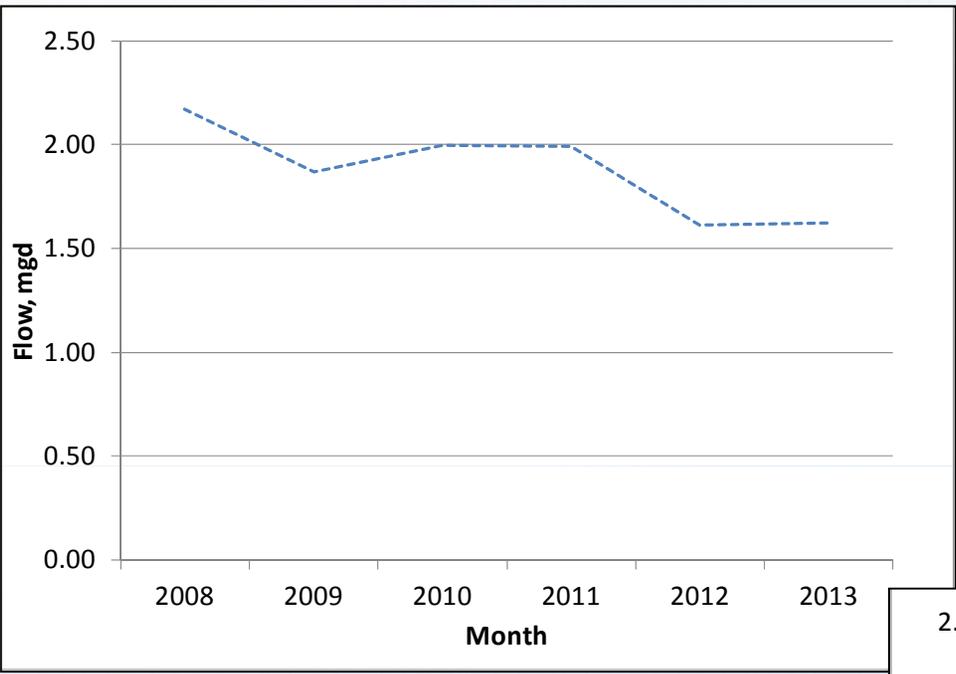
- 
- Need for new water supplies
 - Need for integrated water management
 - Costs for developing new water supplies
 - Funding opportunities

Recycled Water Concepts

Steps for Evaluating Recycled Water

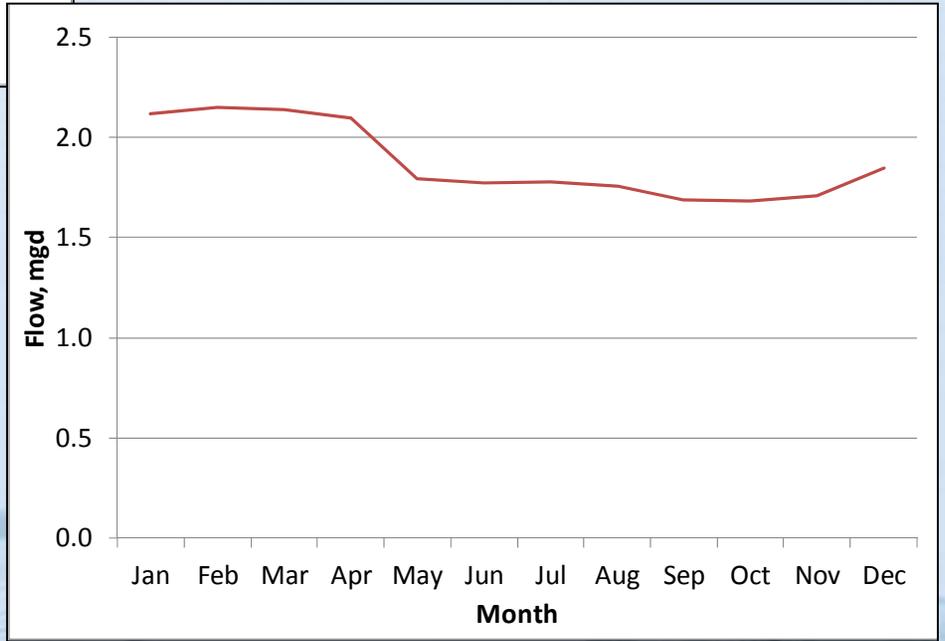


Ojai WWTP Effluent Flow (2008 – 2013)



OVSD Effluent Flow by Year

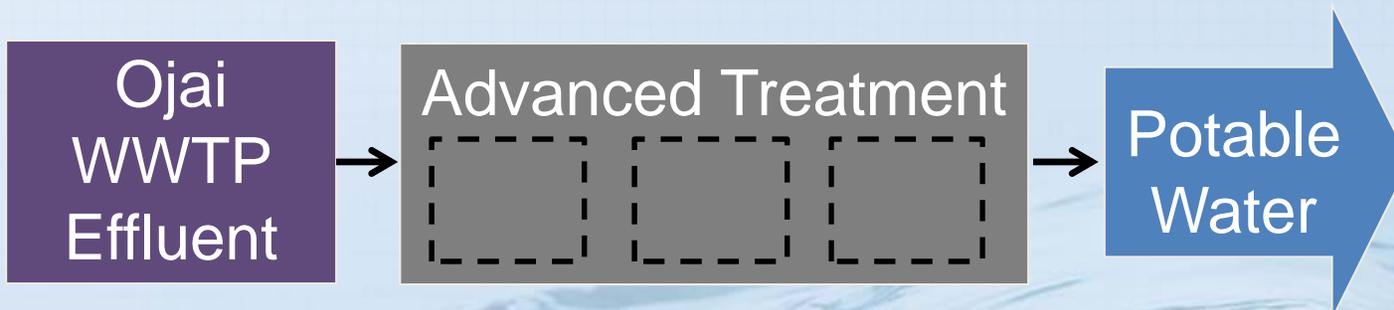
Monthly Variation in OVSD Effluent Flow



Recycled water concepts expand on the 2007 study



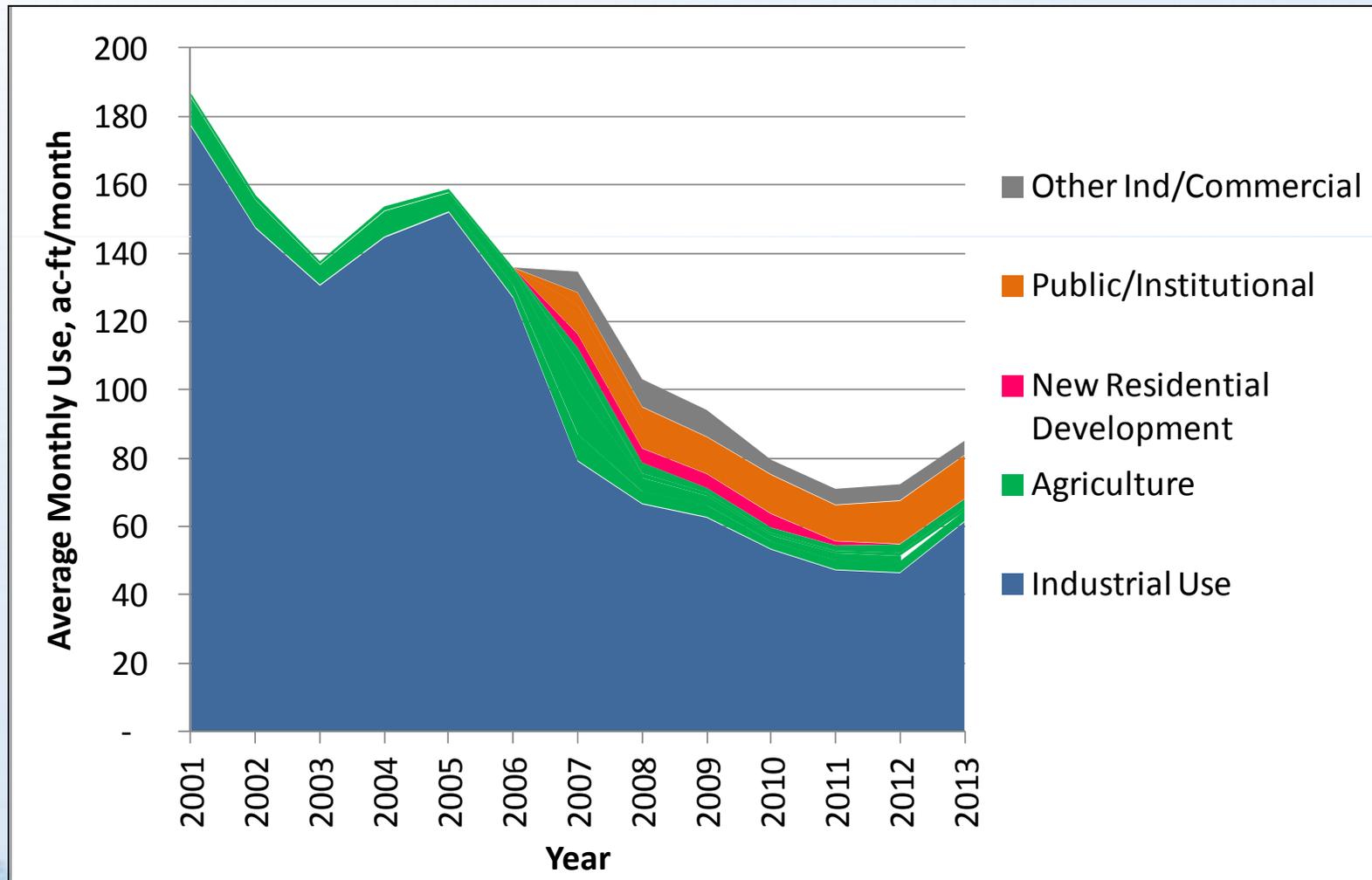
**Compliance with Title 22 standards for unrestricted reuse is assumed, but would need to be verified as part of Title 22 Engineers Report*



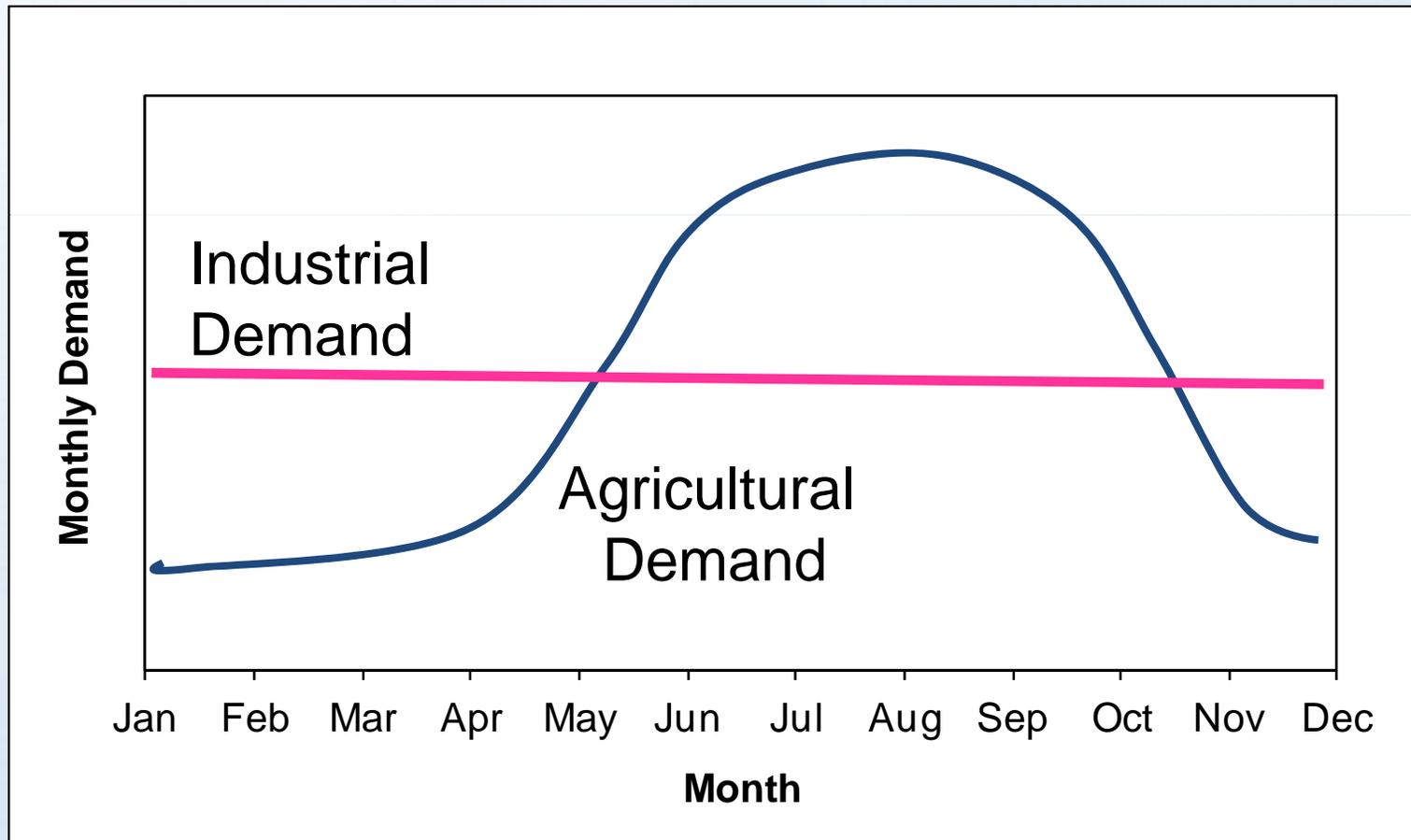
Market analysis for irrigation and commercial/industrial uses



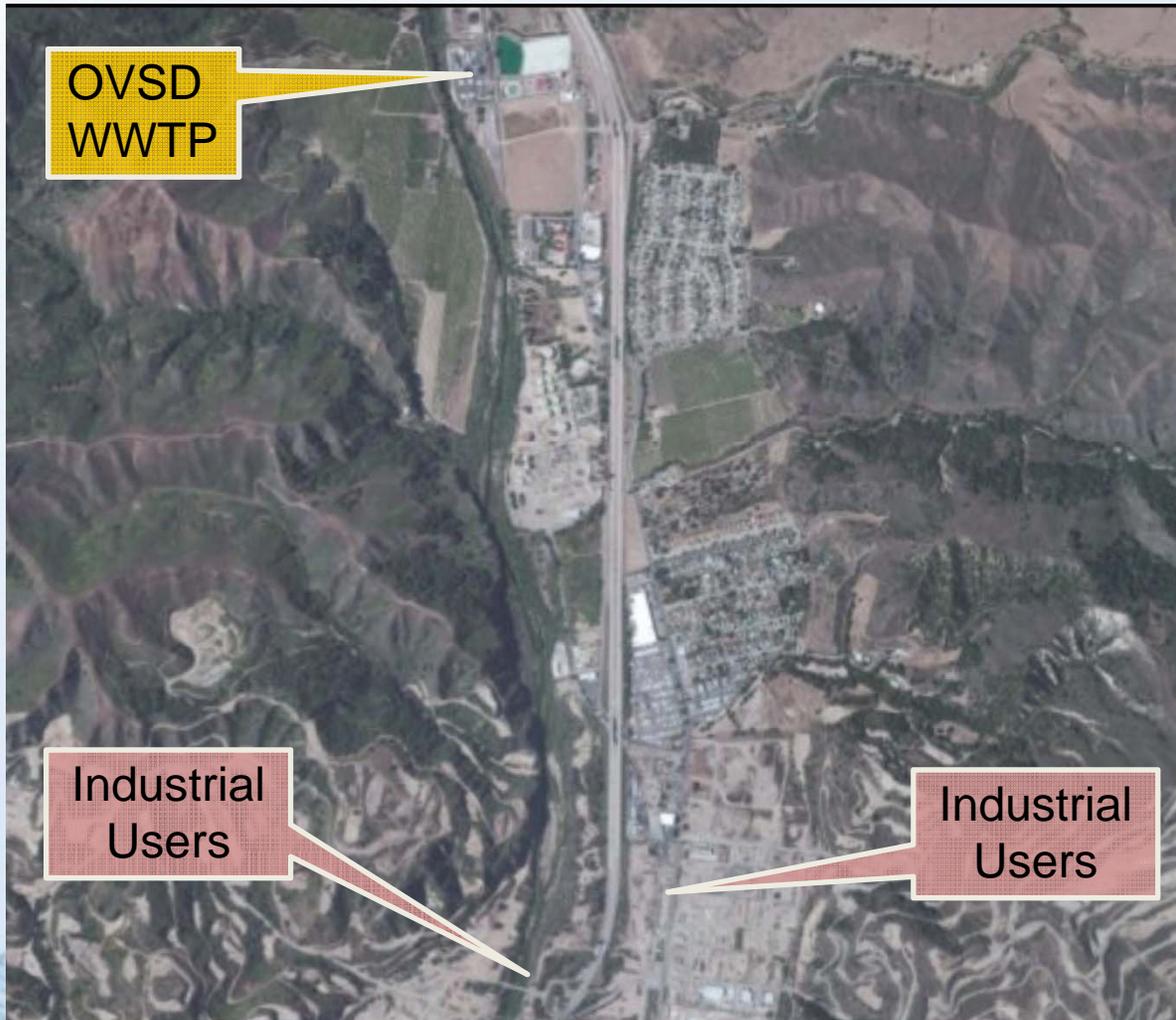
Estimated demands for potential recycled water users



Industrial demands do not follow typical irrigation demands



Industrial customers have the most potential for recycled water use



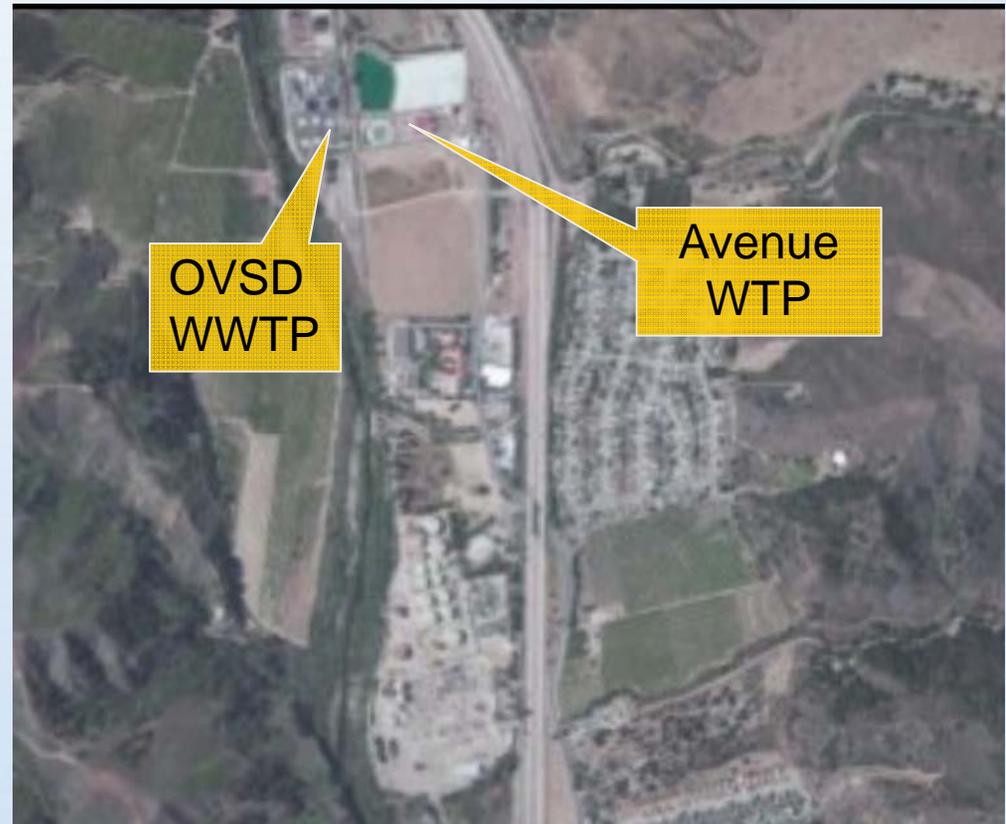
- Average Demand
 - 0.5 mgd
- Primary Uses
 - Dust Control
 - Cooling for pumps and engines

Market analysis for direct potable reuse (DPR)



DPR demand is based on City demands and system capacity

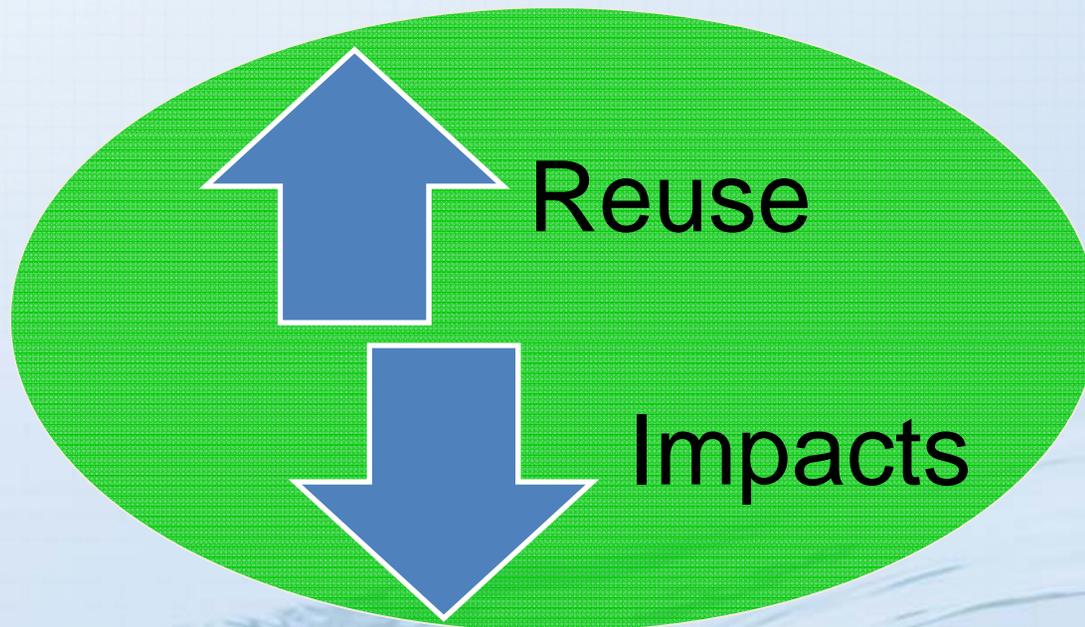
- City could use up to all of OVSD effluent for DPR
- Capacity depends on flow that can be diverted from OVSD discharge



Stakeholder Activity Break

Evaluation of the constraints sets the framework for considering reuse

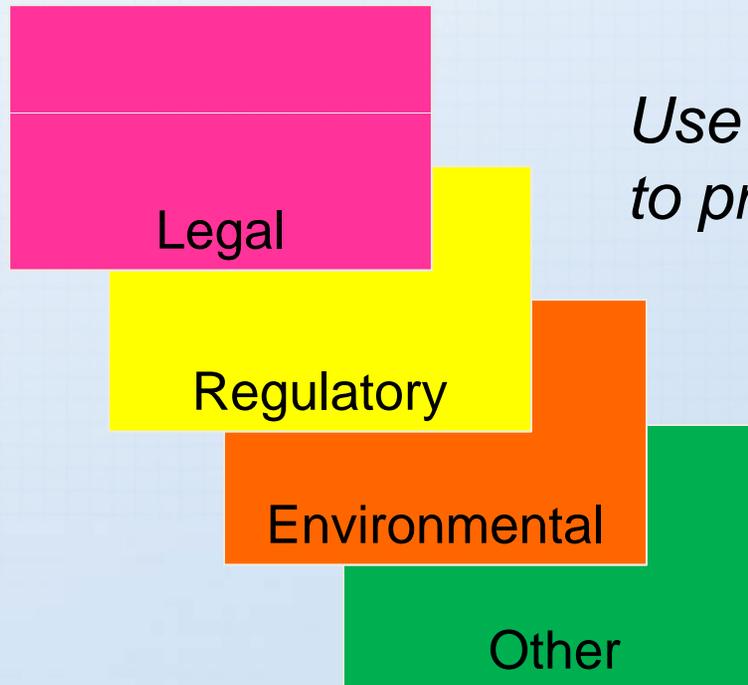
How much flow can be diverted for the beneficial purpose of reuse without significant impact?



Activity – What are the constraints associated with diverting OVSD effluent?

Constraint Categories

- Legal
- Regulatory
- Environmental
- Other



Use your cards to provide input

Identification/Discussion of Constraints

Summary of Legal Issues

Legal Issue	Comment
Use of OVSD Effluent	Per Land Lease Agreement, City has right to use effluent
Downstream Water Rights	Potential diversion volume is within groundwater portion of OVSD effluent and does not present issue with downstream riparian rights
Environmental Flows	Fundamental legal issue. Requires technical analysis to support protection of Steelhead habitat.

Legal Issues Identified by Stakeholders

Issue
Who legally owns the water?
Terms and conditions of current NPDES permit for OVSD
Terms and conditions for Ventura County CUP (conditional use permit) for OVSD
What are the water rights of Taylor Ranch?
Other water right holders?
Downstream water users an impact on their riparian water rights
Impact of Channel Keepers lawsuit
Legality of lease agreement

Summary of Regulatory Issues

Legal Issue	Comment
Algae TMDL	<ul style="list-style-type: none">• Potential opportunity to contribute to OVSD compliance• Concerns with relying on reuse for compliance• Concerns with potential future TMDL revision
Salt and Nutrient Management Plan	<ul style="list-style-type: none">• Recycled water use at industrial user may trigger SNMP requirement• Recycled water use for potable supply would not trigger SNMP requirement

Regulatory Issues Identified by Stakeholders

Issues

Restrictions on use of water as an effluent dominated supply

County restriction based upon permits for treatment plant

State water resources and fish and game

WRC-state

Regional Board requirements of required flows as stated in OVSD permit

Could effluent be used for oil field water flood without Title 22 status?

NMFS Section 7 or 10(a) permitting requirements regarding endangered steelhead

Regulatory Issues Identified by Stakeholders

Issues

USFWS Section 7 or 10(a) permitting requirements for threatened or endangered species

Who is going to pay for Title 22 compliance?

SWRCB to modify OVSD Permit regarding discharges

SWRCB on impact of reduced discharge on water quality

OVSD CUP change

OVSD NPDES Change

Water Right – State Board

TMDL nutrient issues

Regulatory Issues Identified by Stakeholders

Issues

Basin plan degradation of beneficial uses

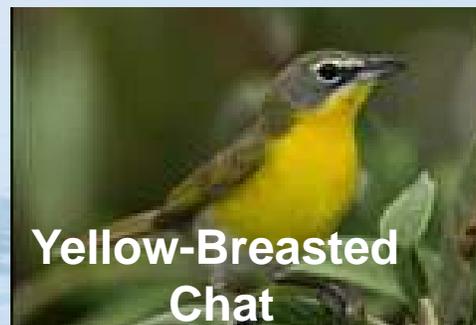
TMDL nutrient reduction

OVSDs discharge permit is tied to river water quality. As part of that requirement (section A 22) specifically addresses water levels. This has not been considered.

The TMDL has even more stringent limitations and monitoring requirements.

Federal Nexus – ESA-Steelhead

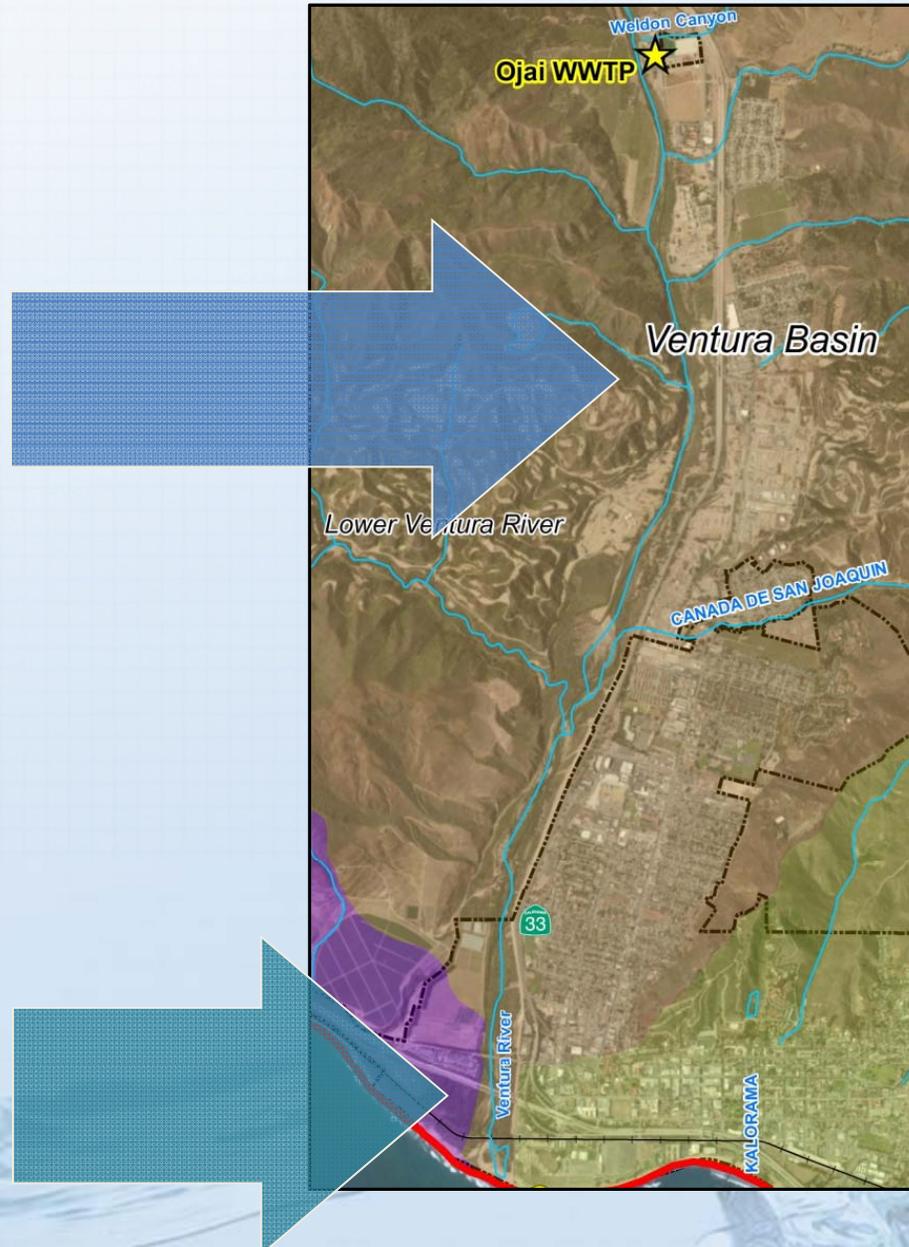
Lower River and Estuary provides habitat for several species



Steelhead use lower river and estuary

- Upstream Migration
- Spawning
 - May occur if flows prohibit upper reach access
- Migratory corridor
- Rearing habitat

- Juvenile rearing habitat
- Post-spawn adults habitat
- Smolts habitat



Summary of Environmental Issues

Environmental Issue	Comment
Species	Steelhead most sensitive to reduced flow regime.
Habitat	Formal steelhead habitat survey has not been conducted for lower river and estuary.
Flow Regime	Flow condition for steelhead not well established for lower river and estuary.
Water Balance	Hydrologic balance not well established for lower river and estuary.

Environmental Issues Identified by Stakeholders

Issues

Many months and some years the river does not need the water so put it to productive use.

When the river needs the water then discharge the effluent.

San Antonio Creek is good steelhead habitat. Establish new discharge point in San Antonio Creek, collect surplus water at Foster Park diversion and treat in existing plant.

Use of water for recreation in lower river.

Fish-Irrigation.

How will the additional water reductions affect downstream and estuary water quality?

How will they affect downstream and estuary dissolved oxygen concentrations?

Environmental Issues Identified by Stakeholders

Issues
Reduction of critical habitat.
Degradation of estuary.
Endangered species.
Beneficial use designation.
Groundwater changes.
Water column chemistry.
Flow provides oxygenated water to regenerate the estuary near the ocean.
Impact of reduced flow on riparian habitat
Impact of reduced flow on steelhead and other fish
Impacts on natural aquatic species (including plants and animals)

Other Issues Identified by Stakeholders

Issues

How will we (Aera) know which source we are drawing from? (raw versus recycled) so that we can manage accordingly?

Public awareness that water from City is not used for water flood activities.

Maintaining source if unable to use recycled water (summer , low flow etc.) will we be able to access other source (raw water) for purchase?

Human factor – Willingness to talk, brainstorm, without preconceived limits.

Keep the stakeholder process open.

Impact on recreational, educational and other non-consumptive use of the Ventura River

Other Issues Identified by Stakeholders

Issues

If OVSD's WWTP went out of business in favor of Ventura's WWTP for instance would there remain a legal responsibility of provide water to the river habitat?

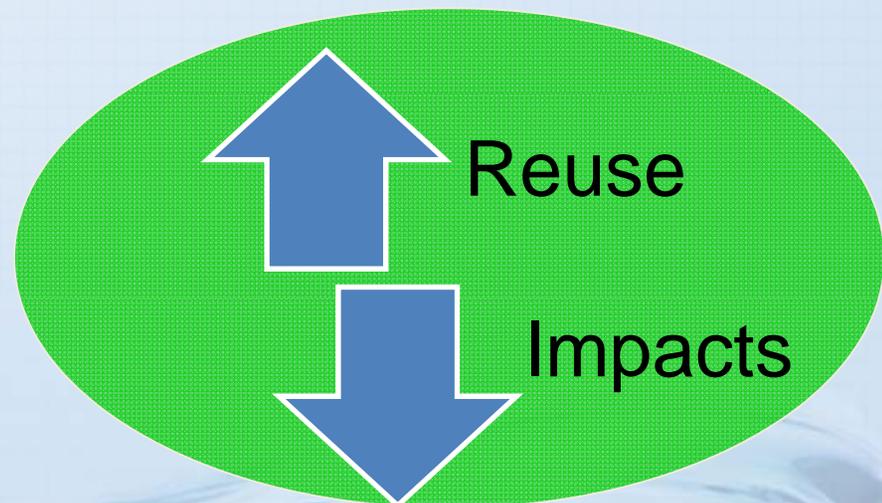
Cost of infrastructure born by City to access effluent and distribute it?

Unwilling partner OVSD.

Recycled Water Alternatives

Possible concepts for recycled water alternatives that work within constraints

- Lower diversion flow
 - 0.25 to 0.5 mgd
- Seasonal diversion
 - Flow based trigger for diversion



To implement a diversion there are data gaps that need to be filled

- Formal habitat survey
- Flow regime for steelhead
- Improved hydrologic balance
 - Additional data collection
 - Water budget analysis

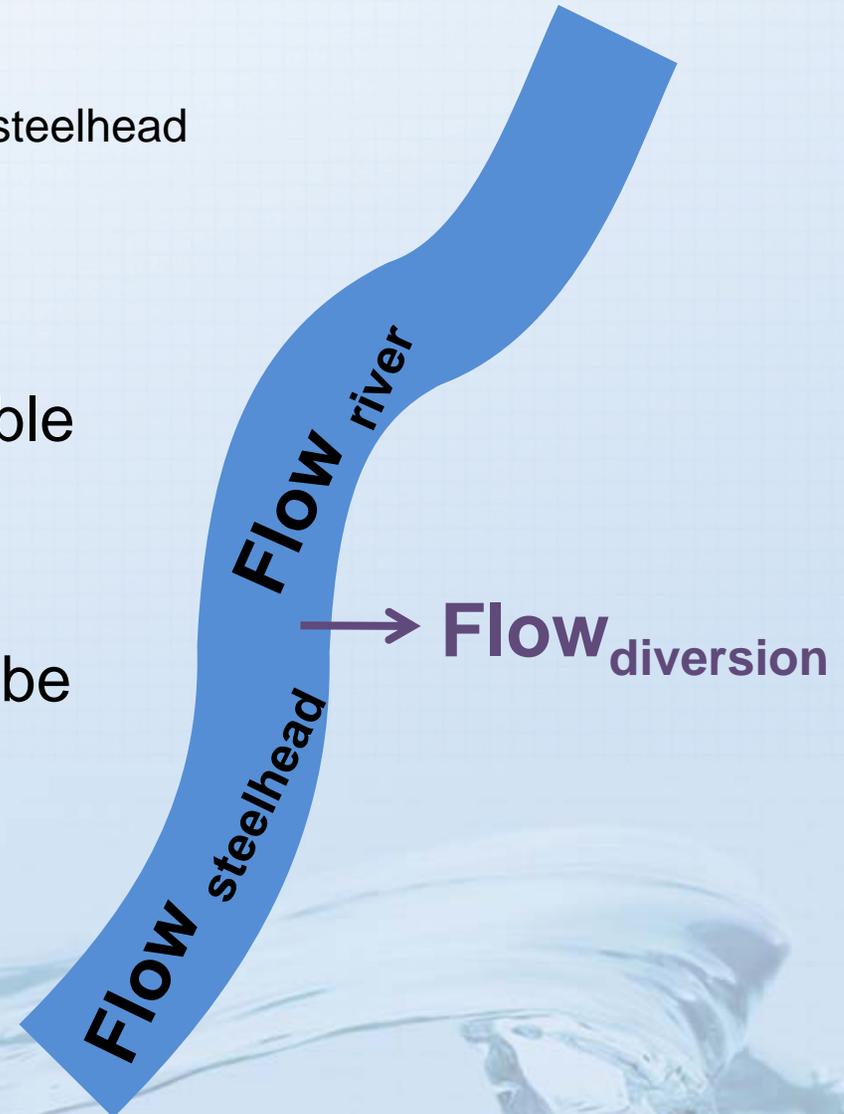


Seasonal diversion concept relies on a flow based trigger for diversion

- $\text{Flow}_{\text{diversion}} = \text{Flow}_{\text{river}} - \text{Flow}_{\text{steelhead}}$

- Feasibility issues

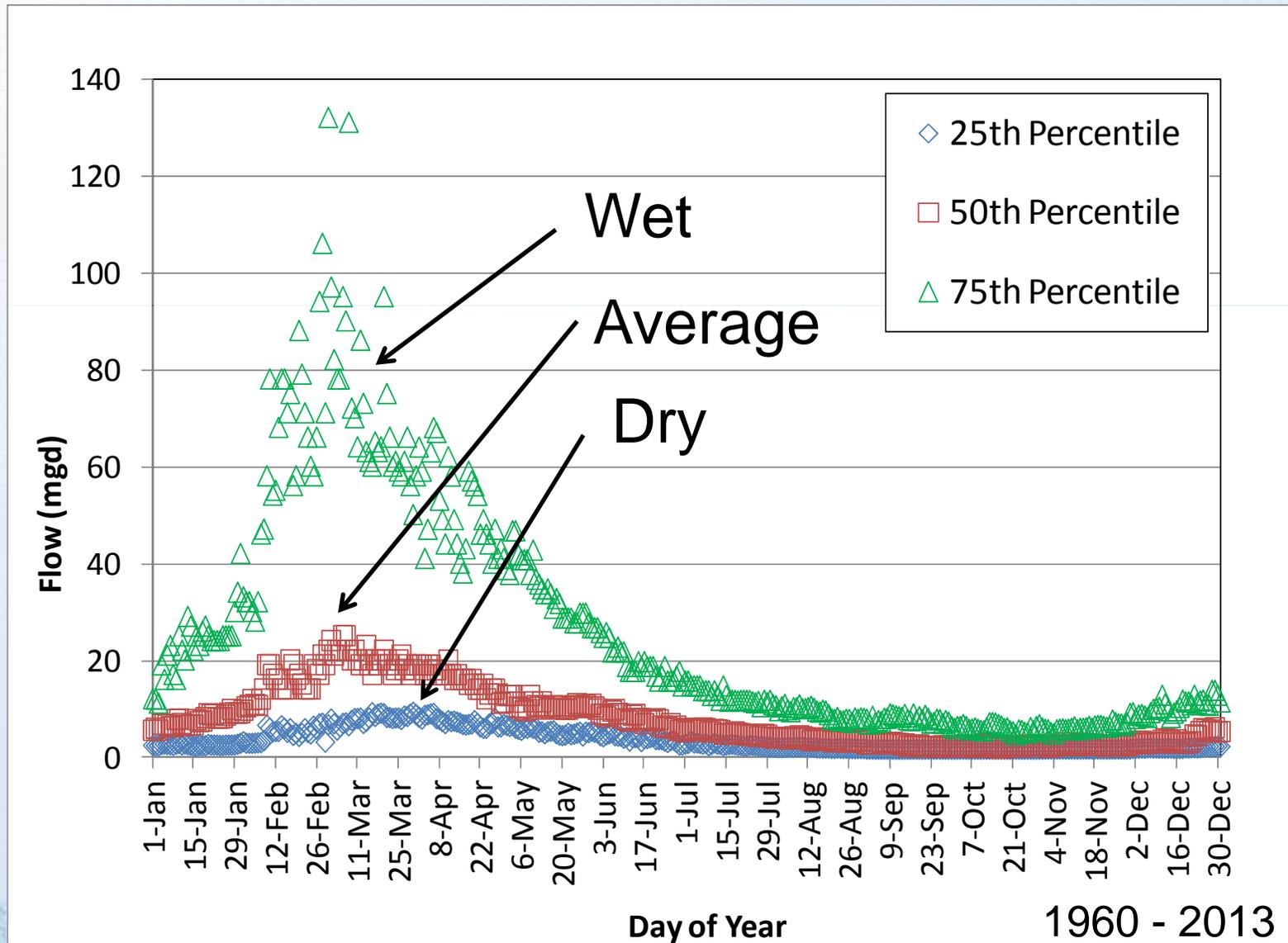
- User that can accept variable supply
- Variable treatment flow
- Sufficient flow for reuse to be cost effective



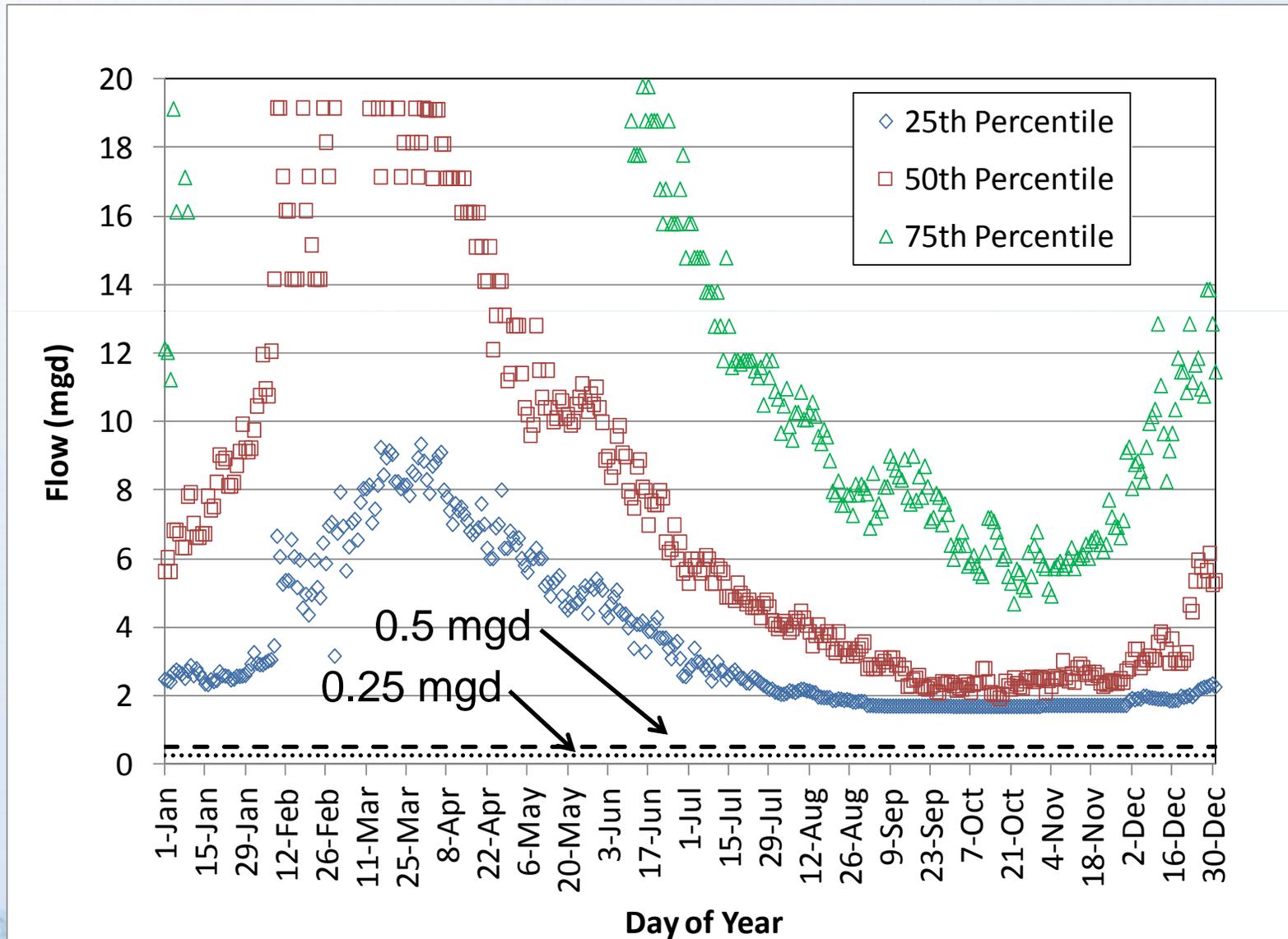
Existing flow monitoring indicates some potential for a seasonal diversion



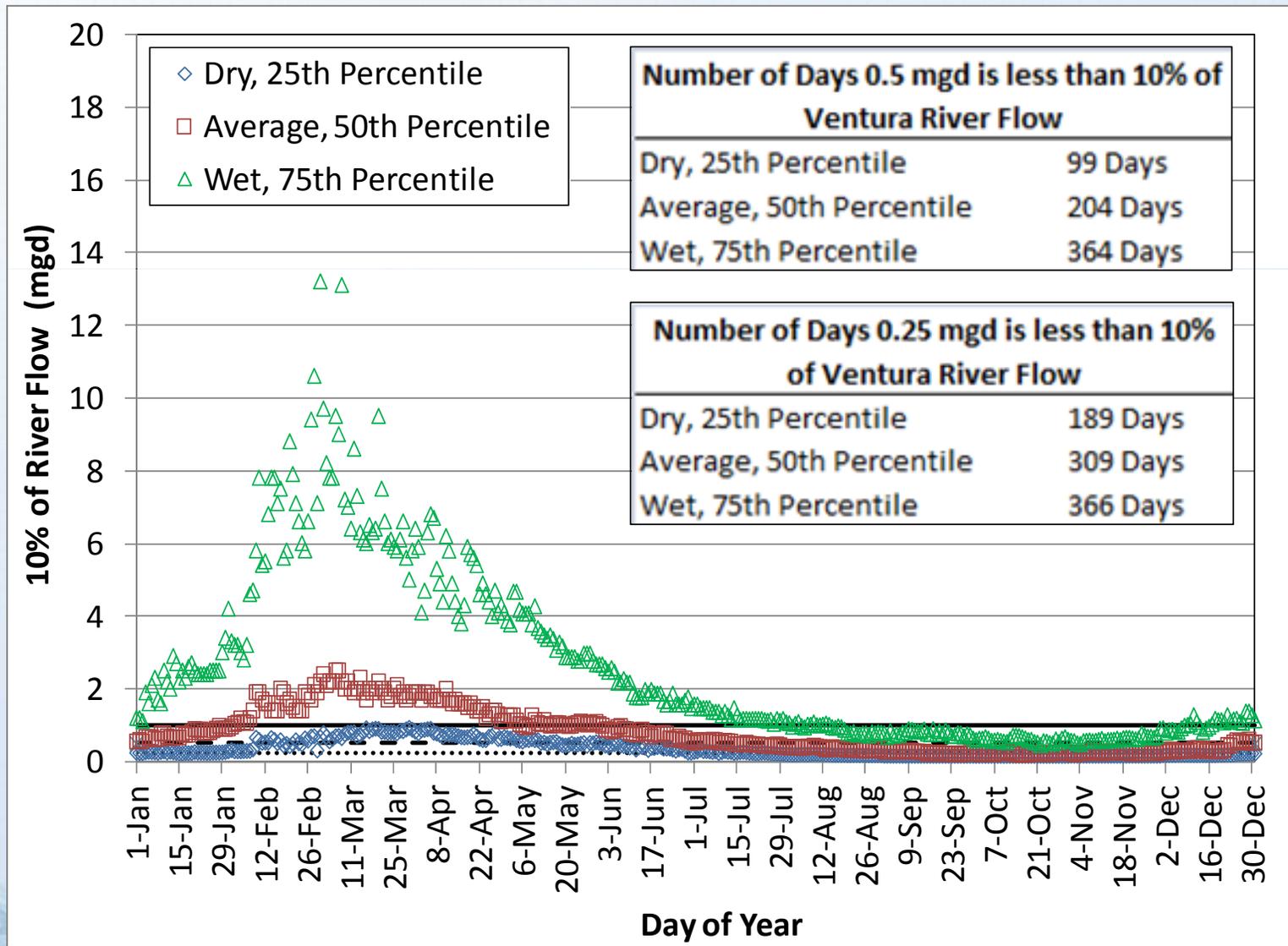
Estimated Ventura River Flow downstream of OVSD Discharge



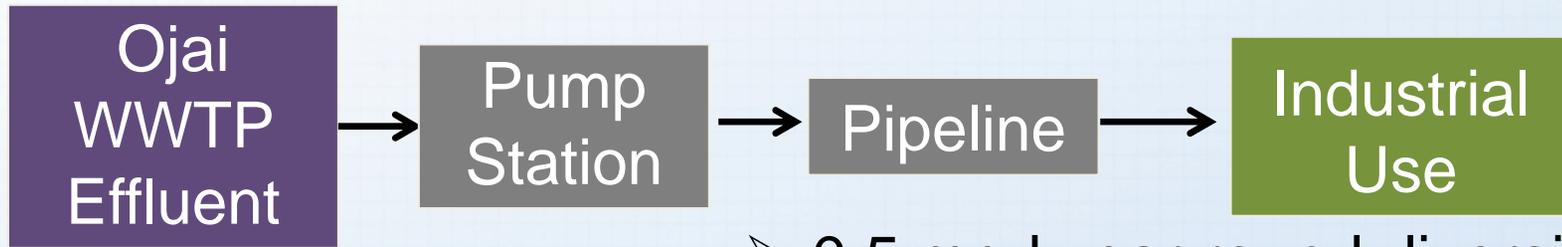
Estimated Ventura River Flow downstream of OVSD Discharge - Scaled



Depending on hydrology, diversion flow is small compared to river flow



Recycled water delivery to industrial use

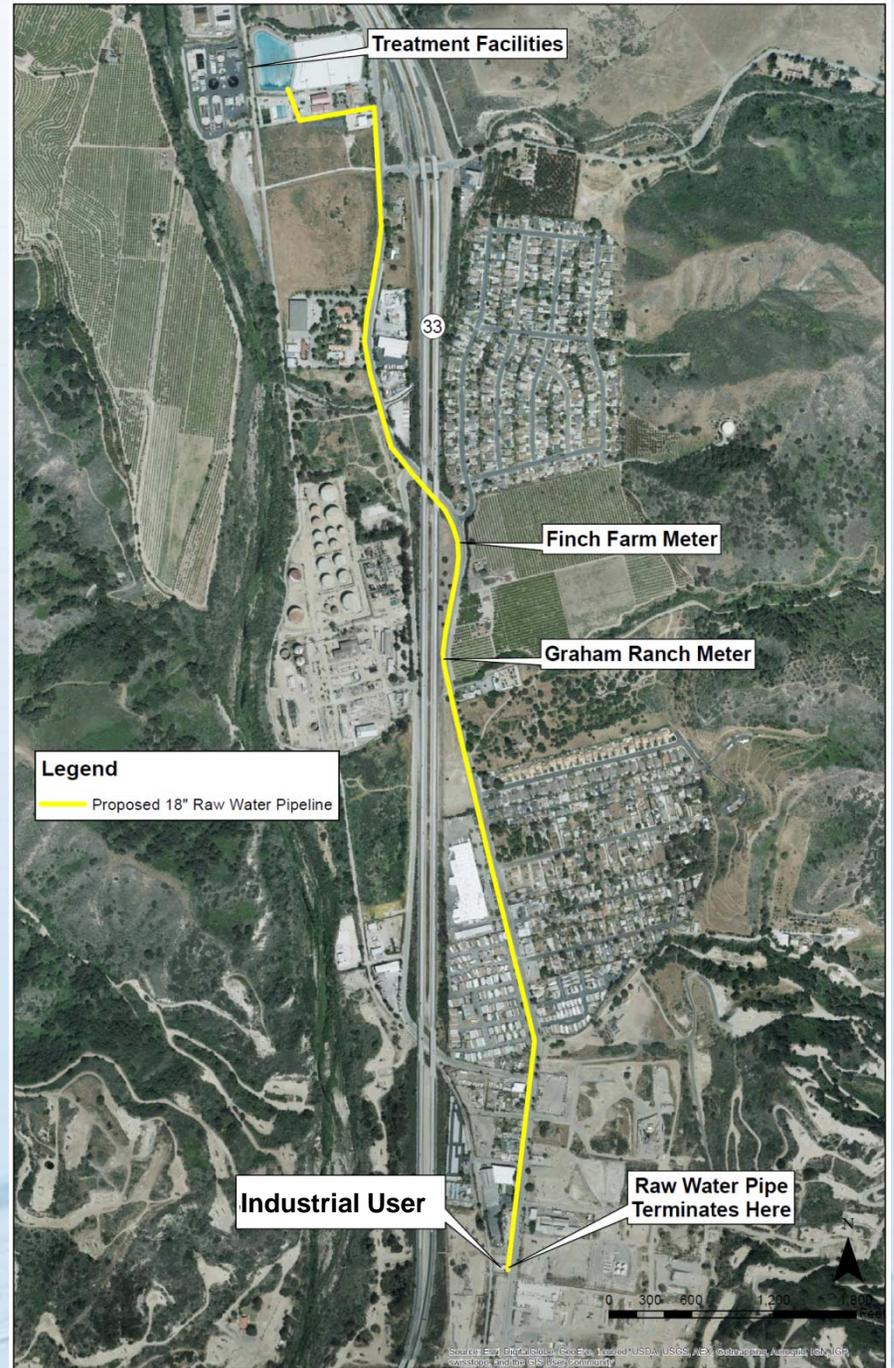


- 0.5 mgd year round diversion
- Potential seasonal diversion

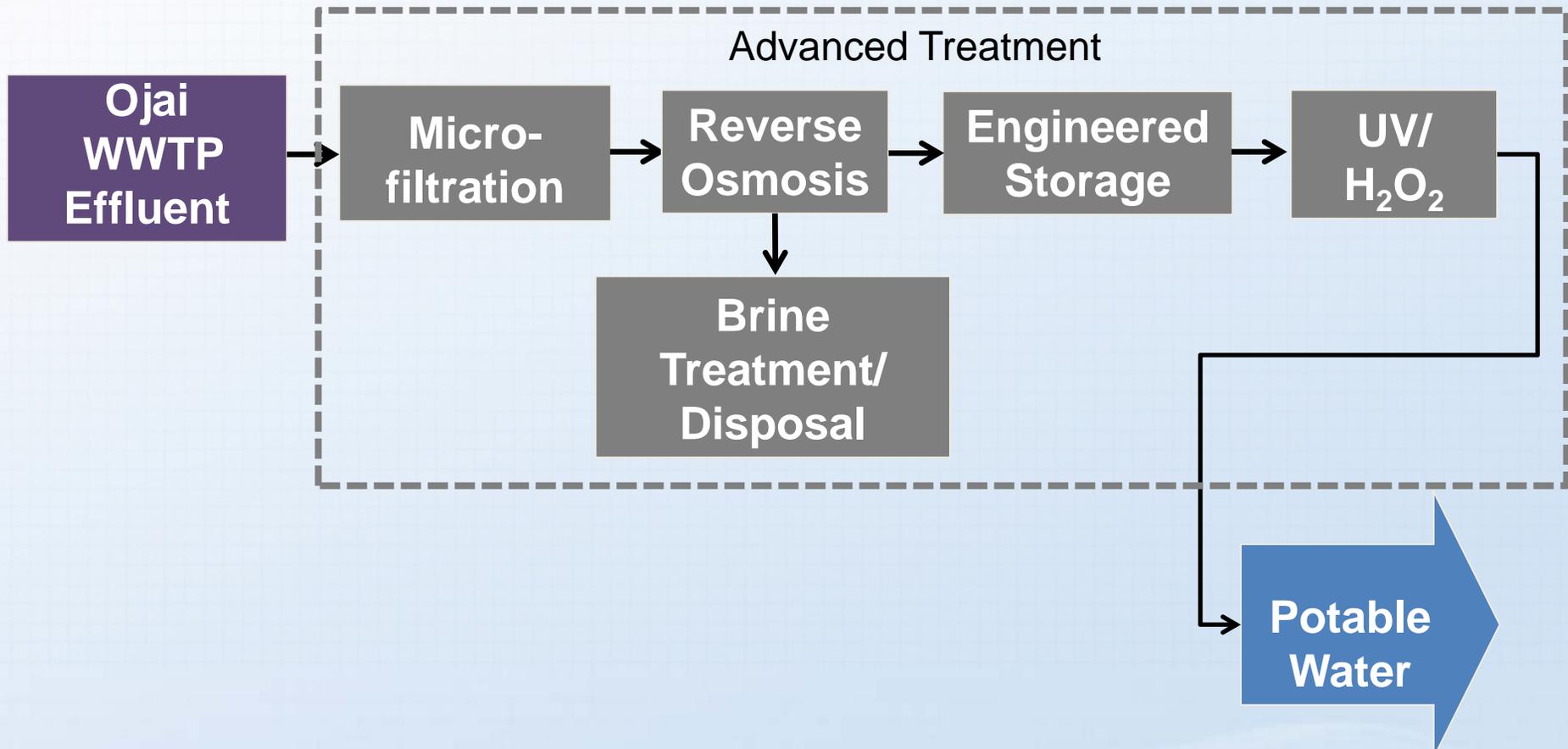
- Title 22 validation
- New pump station
- New pipe to 18" raw water line
- Use of 18" raw water line (comingled with raw water supply for agricultural users)
- Use of existing turnout

Recycled water delivery to industrial use

- Title 22 validation
- New pump station
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Recycled water for direct potable reuse

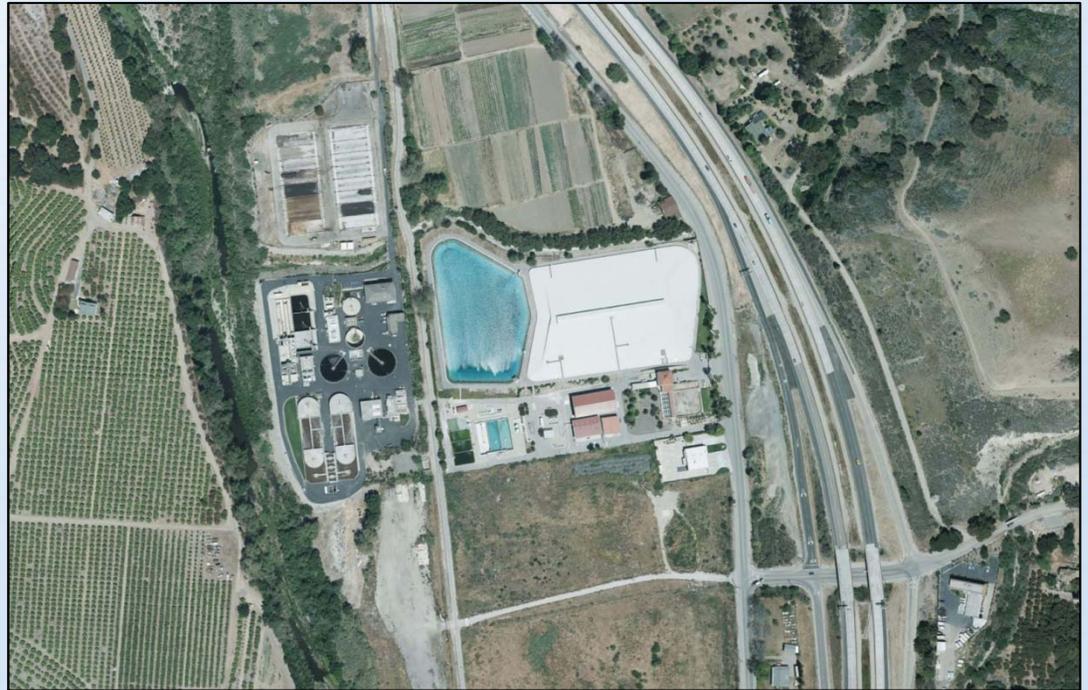


➤ 0.25

➤ 0.5 mgd

Recycled water for direct potable reuse

- New conveyance of OVSD effluent to the Avenue Water Treatment Plant
- Advanced treatment processes at Avenue Water Treatment Plant
- Use of existing potable water distribution system



Summary of Alternatives

Alternative	Flow (mgd)	Unit Cost (\$/AF)
Industrial User	0.5	\$500
DPR	0.25	\$6,000 - \$10,000
DPR	0.5	\$6,000 - \$8,000

Discussion on Recycled Water Alternatives

Which reuse project would you support?

Project

*Use your card
to provide input*

Support/Opposition of Reuse Project from Stakeholders

Issues

Do not support reclamation as presently proposed. Too many variable unaddressed.

Support the 0.5 mgd options.

Move the existing facilities for treating the OVSD plant water to potable to the Ventura WTP where you have more volume and it would help the McGrath flooding problem.

Storm water capture.

Do not support taking of OVSD rate payers effluent. This belongs to ratepayers.

Support the use of 0.5 mgd for industrial use providing all the negative impacts are overcome/avoided.

The cost needs to be weighed versus the benefit.

Support/Opposition of Reuse Project from Stakeholders

Issues

Very limited effluent reuse.

Water conservation.

Storm water diversion capture.

Support of the use of recycled water for Ag and industrial uses. Cost for potable seems out of reach.

Whatever the City and other regulatory agencies decide.

Aera is willing to be a prudent customer in whatever capacity the City decided.

For the City to attempt to recycle the OVSD discharge appears un-economic for the small amount of water under discussion.

Support/Opposition of Reuse Project from Stakeholders

Issues

No project continues reuse for beneficial use.

Support seasonal recycled water use – costs seem prohibitive.

Would like to see a scalping plant up in Ojai.

Industrial use seems reasonable. Stormwater capture seems more feasible.

Would not support any of the proposals. No cost benefit analysis, nominal increase of water that could be offset by other conservation efforts, unrealistic cost of delivering water.

Cost benefit ratio is too low.

Support/Opposition of Reuse Project from Stakeholders

Issues

Cannot support reducing the current minimal flow in the Ventura River. Health of river depends upon this flow in dry times.

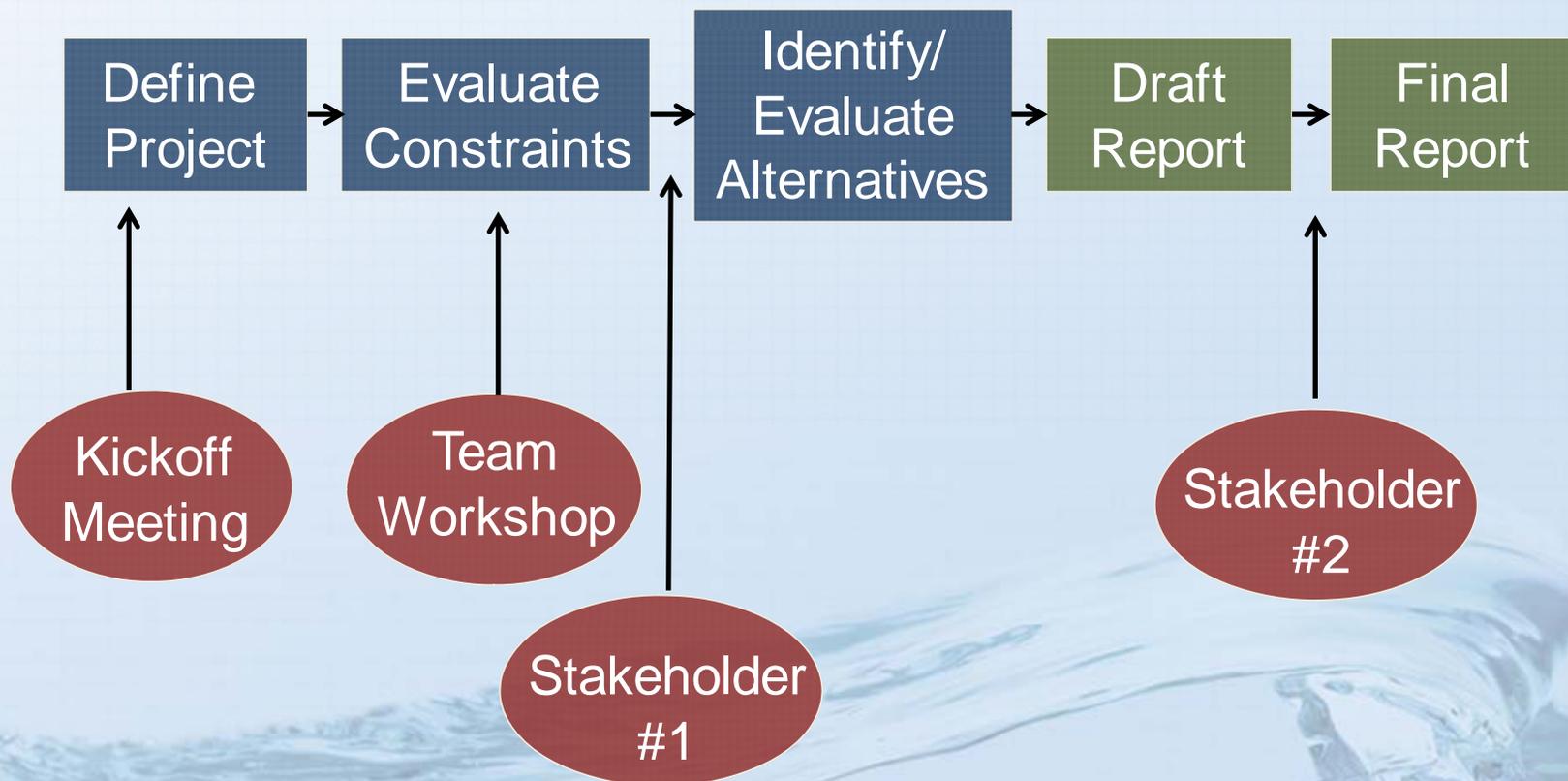
Expanded industrial use is best alternative

Use the habitat created by the discharged water to gain mitigation credits to offset any habitat disturbance associated with the Ventura River water supply or Santa Clara River discharge.

Next Steps

Next Steps

- Compile your comments into PowerPoint presentation
- Post on City website



Project and Contact Information

- Website
 - <http://www.cityofventura.net/water/rivers>
- Contact
 - Karen Waln
City of Ventura
(805) 677-4128
kwaln@venturawater.net

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