



## Santa Clara Valley Water District Board of Directors Meeting

District Headquarters Board Room  
5700 Almaden Expressway  
San Jose, CA 95050

### SPECIAL MEETING AGENDA

**Tuesday, September 20, 2016  
3:00 PM**

**District Mission: Provide Silicon Valley safe, clean water for a healthy life, environment and economy.**

#### DISTRICT BOARD OF DIRECTORS

Barbara Keegan, Chair - District 2  
John L. Varela, Vice Chair - District 1  
Richard P. Santos - District 3  
Linda J. LeZotte - District 4  
Nai Hsueh - District 5  
Tony Estremera - District 6  
Gary Kremen - District 7

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NORMA CAMACHO  
Interim Chief Executive Officer

MICHELE L. KING, CMC  
Clerk of the Board  
(408) 265-2600  
Fax (408) 266-0271  
[www.valleywater.org](http://www.valleywater.org)  
5750 Almaden Expressway  
San Jose, CA 95118-3686

**Note: The finalized Board Agenda, exception items and supplemental items will be posted prior to the meeting in accordance with the Brown Act.**

**Santa Clara Valley Water District  
Board of Directors  
SPECIAL MEETING  
AGENDA**

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Tuesday, September 20, 2016

3:00 PM

District Headquarters Board Room

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**1. CALL TO ORDER:**

1.1. Roll Call.

1.2. Pledge of Allegiance/National Anthem.

1.4. Time Open for Public Comment on any Item not on the Agenda.

*Notice to the public: This item is reserved for persons desiring to address the Board on any matter not on this agenda. Members of the public who wish to address the Board on any item not listed on the agenda should complete a Speaker Card and present it to the Clerk of the Board. The Board Chair will call individuals to the podium in turn. Speakers comments should be limited to three minutes or as set by the Chair. The law does not permit Board action on, or extended discussion of, any item not on the agenda except under special circumstances. If Board action is requested, the matter may be placed on a future agenda. All comments that require a response will be referred to staff for a reply in writing. The Board may take action on any item of business appearing on the posted agenda.*

**2. TIME CERTAIN:**

**3:00 PM**

2.1. Work Study Session on Expedited Purified Water Program - Dual Track Procurement.

[16-0738](#)

- Recommendation:
- A. Receive an update on project delivery methods for the Expedited Purified Water Program;
  - B. Consider staff analysis regarding choice of either Progressive Design-Build or a Progressive Design-Build-Finance-Operate-Maintain delivery method; and
  - C. Consider staff's recommendation to pursue the Progressive Design-Build project delivery method for the Expedited Purified Water Program and provide further direction to staff.
  - D. Receive a summary of the September 7, 2016 Board Ad Hoc Recycled Water Committee meeting regarding the project delivery methods for the Expedited Purified Water Program

Manager: Katherine Oven, 408-630-3126

Attachments: [Attachment 1: PowerPoint+](#)  
[Attachment 2 - Letter from Poseidon Water](#)  
[Attachment 3 - Letter from Table Rock Capital](#)  
[Attachment 4 - Water Utility Enterprise Project Construction Costs](#)

Est. Staff Time: 120 Minutes

**3. ADJOURN:**

- 3.1. Board Member Reports/Announcements.
- 3.2. Clerk Review and Clarification of Board Requests.
- 3.3. Adjourn to Regular Meeting and Closed Session at 4:00 p.m., on September 27, 2016, in the Santa Clara Valley Water District Headquarters Building Boardroom, 5700 Almaden Expressway, San Jose, California.

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**File No.:** 16-0738

**Agenda Date:** 9/20/2016  
**Item No.:** 2.1.

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## BOARD AGENDA MEMORANDUM

### **SUBJECT:**

Work Study Session on Expedited Purified Water Program - Dual Track Procurement.

### **RECOMMENDATION:**

- A. Receive an update on project delivery methods for the Expedited Purified Water Program;
- B. Consider staff analysis regarding choice of either Progressive Design-Build or a Progressive Design-Build-Finance-Operate-Maintain delivery method; and
- C. Consider staff's recommendation to pursue the Progressive Design-Build project delivery method for the Expedited Purified Water Program and provide further direction to staff.
- D. Receive a summary of the September 7, 2016 Board Ad Hoc Recycled Water Committee meeting regarding the project delivery methods for the Expedited Purified Water Program

### **SUMMARY:**

The purpose of this work study session is to provide an update to the Board on key activities that staff has undertaken over the past several months regarding the project delivery method for the Expedited Purified Water Program (Program); to present staff's research and analysis on the alternative delivery methods; to consider staff's recommendation that the District pursue a Progressive Design-Build project delivery method for the Program; and receive a summary of the September 7, 2016 Board Ad Hoc Recycled Water Committee meeting regarding the project delivery methods for the Expedited Purified Water Program. The work study presentation is provided in Attachment 1.

### **Background**

At the July 28, 2015 Board meeting, the Board directed staff to proceed with a Request for Qualifications (RFQ) process for Program delivery and to pursue a dual track procurement for both a Progressive Design-Build (PDB) and a Public-Private Partnership (P3) delivery method.

At the January 12, 2016 Board meeting, the Board received a Final Report on Preliminary Evaluation of Program Delivery Methods for the Program and affirmed proceeding with dual track solicitation for

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Statements of Qualification for both a Progressive Design-Build project delivery and a Public-Private Partnership project delivery.

Staff released a dual track Request for Qualifications (RFQ) on January 15, 2016. Statements of Qualification (SOQs) were due in mid-April 2016. The District received five (5) SOQs for the P3 approach, five (5) SOQs for a PDB of the Silicon Valley Advanced Water Purification Center (SVAWPC) expansion, and four (4) SOQs for a PDB of a pipeline to convey purified water to the Los Gatos Recharge Ponds (Los Gatos Pipeline).

The SOQs were evaluated and shortlists for each group of SOQs were published in June 2016.

Prior to the release of the RFQs in mid-January, staff released a questionnaire to interested proposers regarding the RFQ/RFP process. A key response from several interested parties was a recommendation that the District choose one delivery method prior to proceeding with the Request for Proposal (RFP) stage of the Program.

#### ***Board Ad Hoc Recycled Water Committee Activities***

Staff has presented updates on various aspects of Program development to the Board's Ad Hoc Recycled Water Committee (Committee) at their March 1, May 12, July 6, July 19, and September 7, 2016 meetings. At the July 6, 2016 Committee meeting, the Committee directed staff to proceed with facilitating a Board decision on a project delivery method for the Program prior to issuing an RFP.

On July 19, 2016, the Committee members traveled to Carlsbad, California to meet with staff and Board Chair of the San Diego County Water Authority (SDCWA) to learn of SDCWA's experience in contracting with a P3 entity to design, construct, finance, operate and maintain the 50,000 acre-foot/year Carlsbad Desalination Facility. A tour of the facility was also provided.

The Committee members are also scheduled to meet with City of Stockton officials on September 28, 2016, to learn of the City's recent experience in using a PDB delivery method to design and construct the City's conventional water treatment facility.

#### ***Research/Analysis of Alternative Delivery Methods***

Staff has conducted additional research and received input from independent experts to provide additional perspectives on comparing project delivery methods. The qualifications of the independent experts are summarized in Table 1.

**Table 1: Qualifications of Independent Experts Providing Input to the District in Comparing Delivery Methods**

<b>Name</b>	<b>Affiliation</b>	<b>Experience</b>
Michael Bennon	Stanford University	Managing Director at the Stanford Global Projects Center with a focus on Public Sector finance, infrastructure and real estate investment, and project organization design.

Jeff Hughes	University of North Carolina at Chapel Hill	25 years of experience assisting communities in addressing finance and policy challenges related to the provision of environmental services and programs. He recently completed research on the projected and actual costs of P3s in the water sector.
Jill Jamieson	JLL Inc., global professional services and investment management firm	25 years of successful global experience, specific areas of expertise include multi-sector P3 program development; transaction advisory services, and asset optimization strategies, as well as broader public financial management strategies. Ms. Jamieson served on the Board of the US National Council for Public Private Partnerships, as well as on the Advisory Board for the United Nations PPP Specialist Centre of Expertise.
Sandra Kerl	San Diego County Water Authority	25 years of progressively responsible experience in all aspects of municipal management. As Deputy General Manager, she was a key lead on the Water Purchase Agreement for the Claude "Bud" Lewis Desalination Project and the lead on the Project Financing.

On August 10, 2016, staff convened a group of experts for a day-long internal workshop. The agenda included summarizing District objectives for the Program, defining the delivery method options, reviewing relevant case studies, discussing Program risks, and delving into the key differences between the delivery method options.

The staff-identified District objectives used for comparison between the project delivery methods include:

1. Speed: One of the original drivers for pursuing alternative project delivery methods.
2. Quality: Encompassing construction, operations, maintenance, product water quality, and reliability considerations.
3. Control (System Integration): Effective integration of new facilities and their operations with the District's water supply system; ability to ramp flow deliveries up/down efficiently. It was noted that, in a P3 context, the transition from "Doer" to "Regulator" could constitute a District culture shift.
4. Cost: Lowest life-cycle cost with upper ceiling/risk transfer. Flexibility to scale-up capacity cost-effectively.
5. Success: Minimizing adverse reactions among internal and external stakeholders including rate concerns, public outreach, labor issues and others.

### ***September 7, 2016 Board Ad Hoc Recycled Water Committee Meeting***

The September 7, 2016 Board Ad Hoc Recycled Water Committee meeting included a workshop on the difference between the PDB and P3 approaches and staff's assessments of how the PDB and P3 project delivery methods align with the above-listed objectives. Attachments 2 and 3 contain letters submitted to the Committee for this meeting by the two short-listed P3 proposers (Poseidon Water and Table Rock Capital).

Some key comments and questions raised by the Committee during the workshop included the

following:

1. Need to consider privatizing the existing SVAWPC **and** the expanded SVAWPC operations to make a P3 more viable.
2. Concerns expressed regarding cumulative impacts of financing this Program and other water supply efforts (CalWater Fix; Sites or Los Vaqueros Reservoirs)
3. Need to characterize risk transfer, particularly for capital cost overruns.
4. Should consider PDB for Los Gatos Pipeline and P3 for expanded SVAWPC.

The Committee requested additional information concerning capital cost performance on past District projects. Attachment 4 lists all Water Utility Enterprise-funded capital projects constructed by the District since 2000 (56 projects). The average percent change between the original construction bid amount and the final construction cost for all projects listed varies from 6% to 9%.

It is important to also note that the data in Attachment 4 reflect the District's historical use of Design-Bid-Build for capital projects, and cannot be extrapolated to the alternative delivery options of PDB or P3 that the District is considering for the Expedited Purified Water Program. As will be described further in staff's presentation, a design-build effort obliges the designer and builder to work collaboratively to implement a project. The Design-Build industry has documented lower costs and faster construction schedules that result from this type of alliance.

### ***Staff's Recommendation***

As presented to the Ad Hoc Recycled Water Committee on September 7, 2016, and based on staff's research, analysis, and workshop discussions, staff believes that the Progressive Design-Build (PDB) method best aligns with staff's understanding of the District's objectives, for the following reasons:

- PDB affords simplified contract negotiations with nearly equivalent incentive structure (the Guaranteed Maximum Price limits cost overruns, incentivized performance to accelerate delivery, etc.) as for a P3.
- PDB would retain the District as the project owner with operations and maintenance responsibilities, a "doer" versus that of a water purchaser or "regulator."
- PDB would allow for District operations and maintenance control of the purified water facilities and afford better management, flexibility and integration with the District's in-county water distribution and treatment system.
- PDB would allow the District to leverage its core competencies and expand its workforce capabilities.
- Key cost risks associated with construction, financing, O&M can be managed.

The Committee considered staff's presentation and recommendation and directed staff to bring their presentation and recommendation to the full Board for discussion.

### **FINANCIAL IMPACT:**

There is no financial impact associated with this item.

**CEQA:**

The recommended action does not constitute a project under CEQA because it does not have a potential for resulting in direct or reasonably foreseeable indirect physical change in the environment.

**ATTACHMENTS:**

Attachment 1: PowerPoint Presentation

Attachment 2: Letter from Poseidon Water

Attachment 3: Letter from Table Rock Capital

Attachment 4: Water Utility Enterprise Project Construction Costs (2000-present)

**UNCLASSIFIED MANAGER:**

Katherine Oven, 408-630-3126



# Work Study on Expedited Purified Water Program Dual Track Procurement



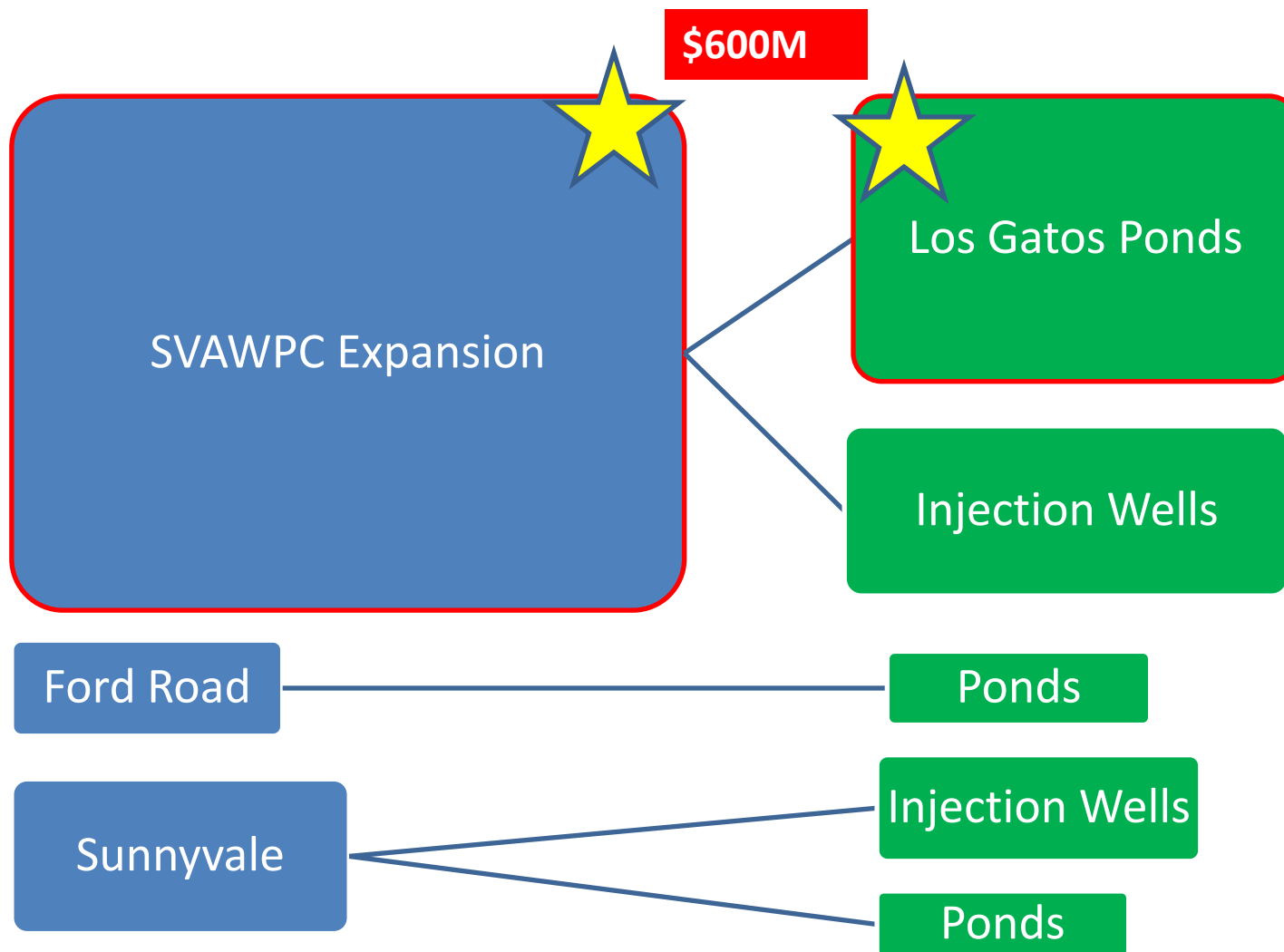
# Two Project Delivery Methods

1. Progressive Design-Build (PDB) and Public-Private Partnership (P3) project delivery methods represent departures from the District's historical design-bid-build approach.
2. Identified for their ability to deliver the Program faster, transfer project risks and at lower costs.
3. Selecting one path prior to releasing Request for Proposal is highly recommended.

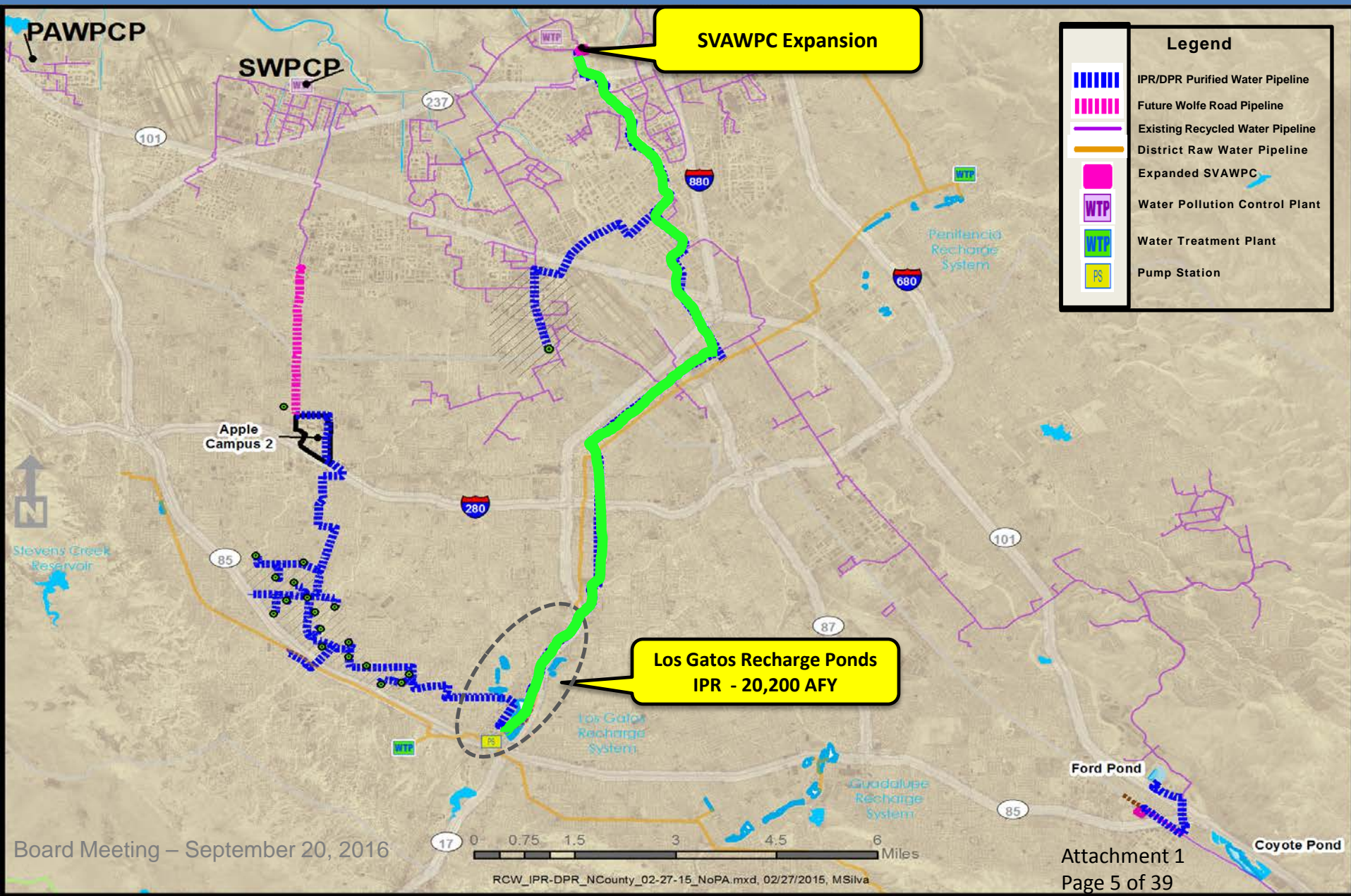
# Work Study Outline

1. Program Background
2. Overview of Delivery Methods Under Consideration
3. Staff Assessment of Delivery Methods
4. Staff Recommendation
5. Board Ad Hoc Recycled Water Committee Comments from September 7, 2016 Committee Meeting

# Potential Program Elements



# RFQ Components – Group A



# Dual Track Procurement History - 1

## Calendar Year 2015

1. Alternative project delivery methods available to expedite potable reuse implementation.
2. Board supported dual track approach to determine best method.
3. Dual track respondents expressed concerns prior to release of RFQs.

Progressive Design-Build	Public-Private Partnership (P3)
Collaborative development of project concept.	
Costs developed through an open book process.	
Guaranteed maximum price for construction to be approved by Board.	Water availability agreement negotiated and approved by the Board.
Capital costs are negotiated between Owner and DB entity.	Capital and O&M costs are negotiated between Owner and P3 entity.
District provides 100% funding, integration of program elements and O&M.	P3 provides 70% of funding, integration of program elements and O&M; 30% is Owner pay-go.



# Dual Track Procurement History – 2

## Calendar Year 2016

1. Strong RFQ response in April.
2. Shortlists published in June (highlighted in yellow).
3. Recycled Water Committee visited San Diego County Water Authority on July 19;
4. Staff held internal P3/PDB workshop in August.
5. Recycled Committee work study session held on September 7.
6. Recycled Water Committee to visit City of Stockton on September 28.

Progressive Design-Build		Public-Private Partnership (P3)
SVAWPC Expansion	Purified Water Pipeline	
<b>Filanc-BV</b>		SJWC (Filanc-BV, SJWC & Citigroup Global Markets)
<b>CH2M</b>	<b>CH2M</b>	<b>Table Rock (CH2M &amp; Goldman Sachs)</b>
Fluor (Kiewit)	Fluor (ARB)	Fluor (ARB/Kiewit, SUEZ & Aberdeen)
<b>CDM-PCL</b>	<b>Garney Pacific (Lockwood)</b>	PERC Water (Layton, Tetra Tech & Stonepeak Infrastructure)
MWH/Webcor	<b>Ranger Pipelines (HMM)</b>	<b>Poseidon (Sacyr, Arcadis &amp; Poseidon)</b>

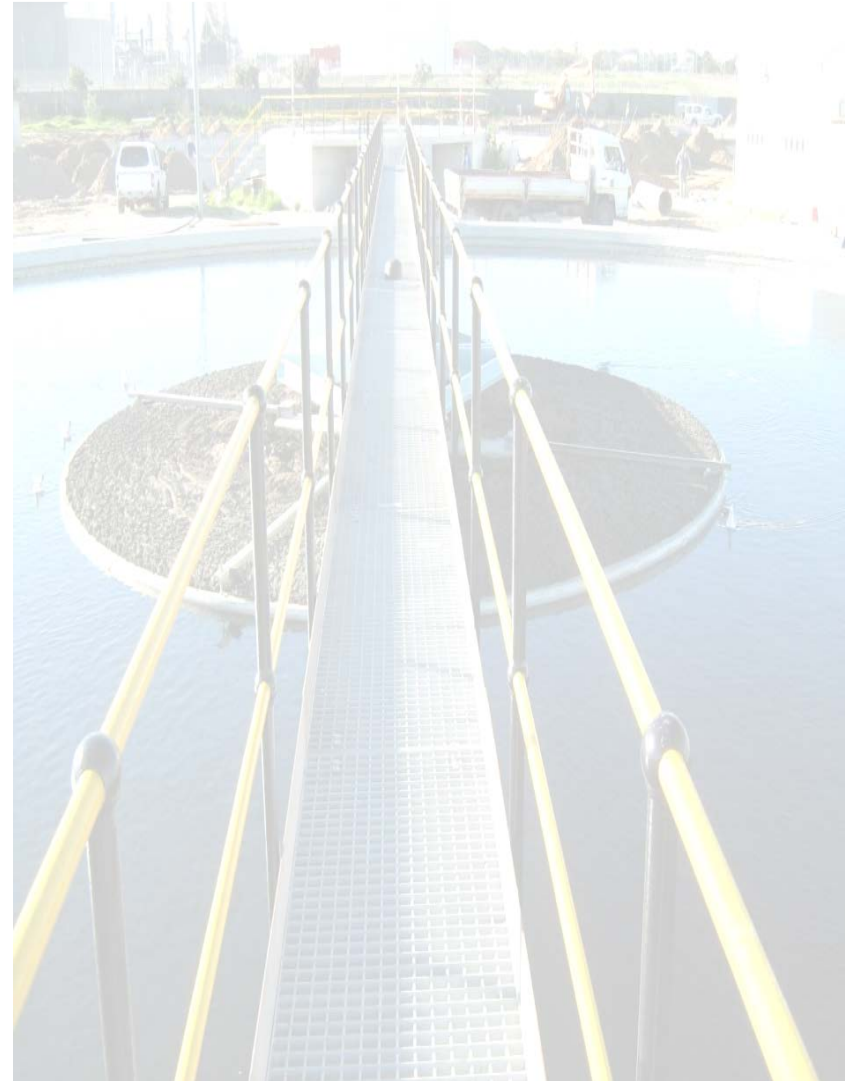
# Overview of Delivery Methods

**By: Jill Jamieson**



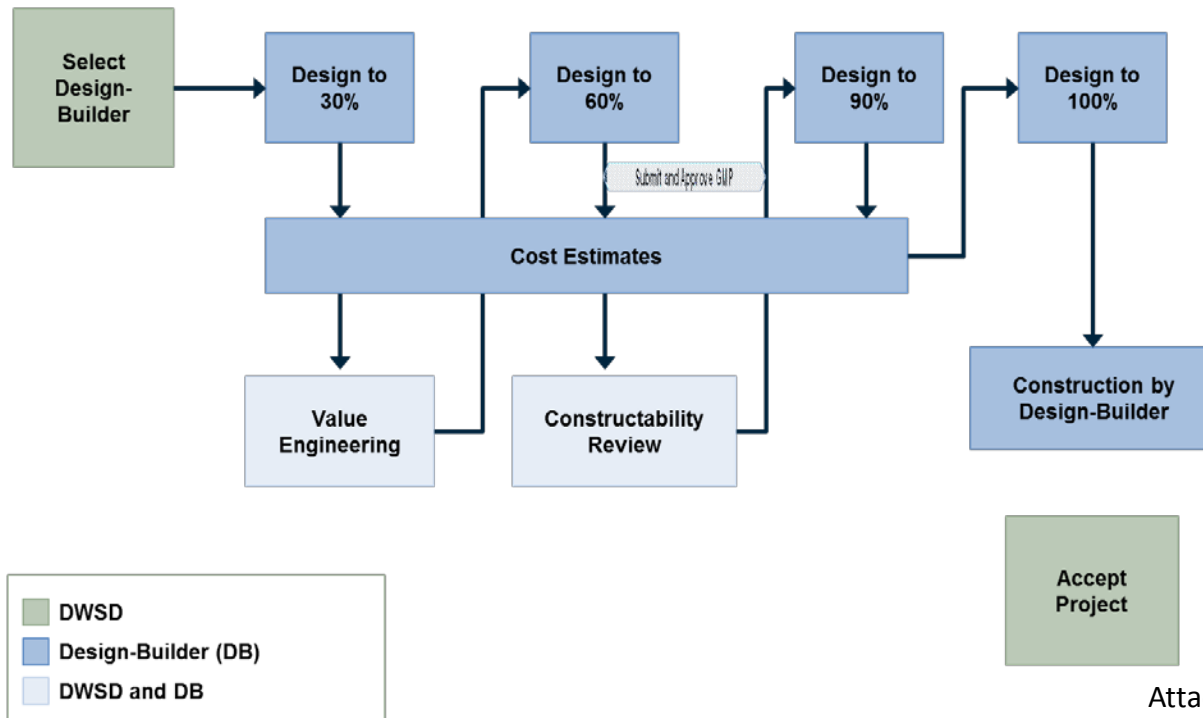
# Best Practice: *Selecting Contracting Modalities*

- There are no absolute truths when it comes to selecting a contracting modality
- Usually not an “either/or” decision. Typically the focus is on tailoring a structure that best meets objectives and optimizes value-for-money for the owner
- Best practice evaluation methodologies involve both **qualitative** and **quantitative** comparison of options; however, determining the optimal contracting structure is not a perfect science, nor without its pitfalls
- Challenges involved in *high-level assessments*
- Suggestions:
  - Beware of biases
  - Clarify the comparison
  - Don’t let vernacular drive the decision



# Progressive Design-Build (PDB)

- PDB is popular and increasingly standardized delivery structure for water utilities
- Collaborative approach to design, while likewise allowing for cost and schedule risk transfer to private partner
- Low procurement risk (“less investment in procurements and more in projects”)
- Open-book pricing and off-ramp option to ensure competitive pricing
- Incentivized performance and risk sharing



# Progressive Design-Build (PDB)

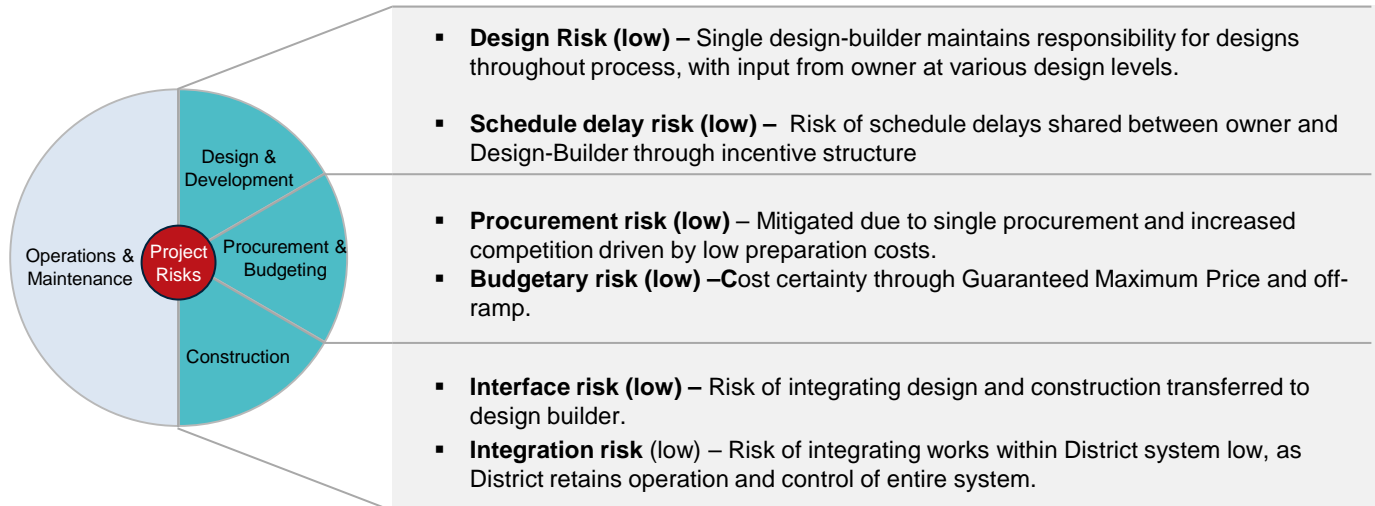
## Advantages

- Compressed
- Cost analysis of options available as project progresses; opportunities for value-engineering
- Transfer of cost and schedule risk to contractor
- Maximizes owner flexibility, involvement and system control

## Disadvantages

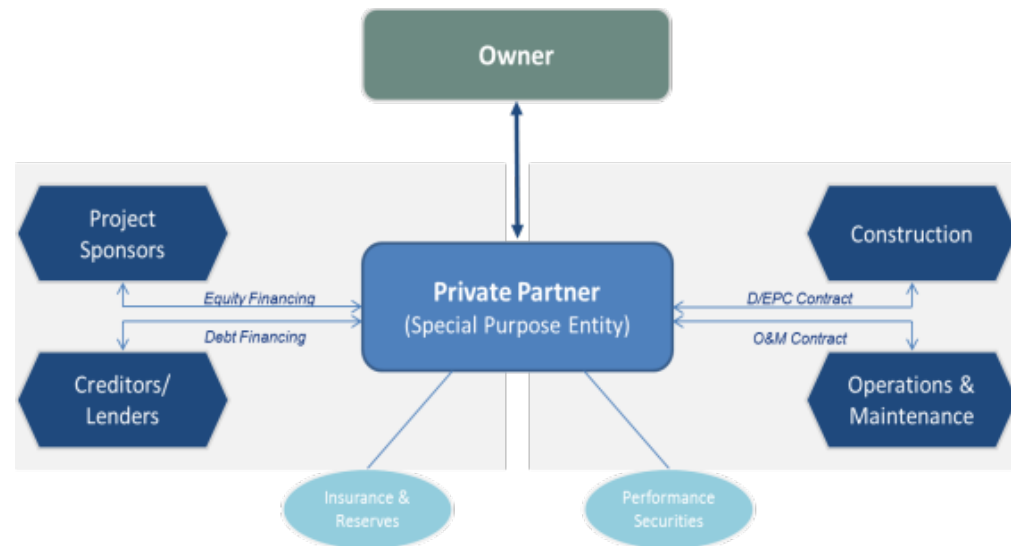
- Cost for construction not known at the time of initial contract signing
- Cost is determined through combination of negotiated and competitive processes
- Asset life-cycle maintenance not addressed

## Risk Considerations



# Design-Build-Finance-Operate-Maintain (DBFOM)

- DBFOM is a long-term contract between a public agency and a “private partner” for the design, construction, financing, operation and/or maintenance of an infrastructure facility.
- Terms and conditions of agreement can vary greatly and will define scope of responsibilities, as well as level of risk transfer to private partner.
- Addresses life-cycle needs of the asset.
- Significant (not total) cost, schedule and performance risk transfer to private partner. District does retain significant risk, as well as contingent liabilities.
- District’s proposed approach (introducing a “progressive” element into the DBFOM) is innovative, but not industry standard.



# Design-Build-Finance-Operate-Maintain (DBFOM)

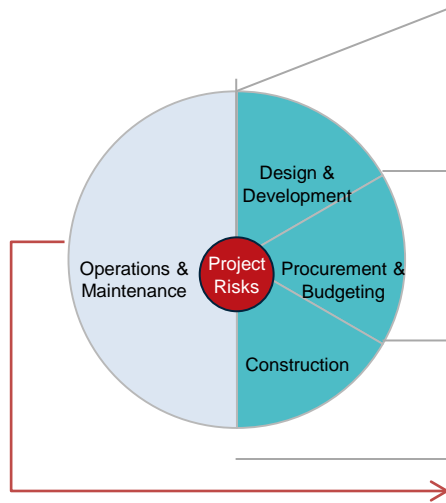
## Advantages

- Life-cycle O&M (including rehabilitation) addressed by private partner;
- Transfer of cost and schedule risk to private partner
- Lenders' reps provide additional oversight
- Hand-back conditions secured

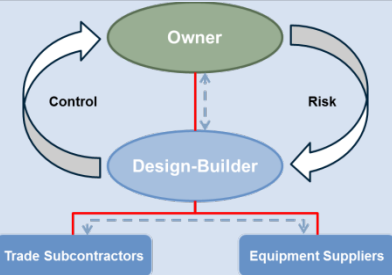
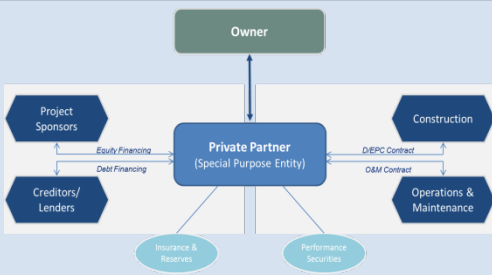
## Disadvantages

- Higher cost of capital than public finance;
- More complex agreement due to financing provisions
- More complex agreement requires more sophisticated contract governance and oversight

## Risk Considerations



- **Design Risk (low)** – Single design-builder maintains responsibility for designs throughout process, with input from owner at various design interventions.
- **Schedule delay risk** – Risk of schedule delays mostly transferred to private partner (or shared);
- **Procurement risk (moderate)** – Single procurement for asset life-cycle create some savings, but .procurement process can be complex, lengthy and costly..
- **Budgetary risk (low)** – District's life-cycle budget .obligations established in P3 agreement
- **Interface risk (low)** – Risk of integrating design and construction transferred.
- **Integration risk (moderate)** – Multiple operators and long-term obligations deriving from P3 contract could impact District control and management of water system.
- **O&M Budgetary risk (low)** – Mostly transferred to private partner.
- **Performance Risk (low)** – Prescribed performance levels and bonding.
- **Technology Risk (low)** - Transferred to private partner
- **Handback Risk (low)** – prescribed levels and bonding ensure handback standards

	PDB		P3 (PDBFOM)
Project Structure			
Risk Considerations	<ul style="list-style-type: none"> <li>• Cost risk transferred through progressive design process, open book and off-ramp option</li> <li>• Most (not all) construction cost overrun risk transferred to design-builder through GMP</li> <li>• Most (not all) schedule risk transferred to design-builder through incentive structure</li> <li>• District retains life-cycle performance and management risk</li> <li>• Integration risk minimized</li> <li>• Minimal procurement risk and cost</li> </ul>		<ul style="list-style-type: none"> <li>• Unique “progressive approach” to DBFOM could cause some pricing risk, but alignment of construction and operating considerations should generate some efficiencies.</li> <li>• Most (not all) construction cost overrun risk transferred to design-builder through GMP</li> <li>• Most (not all) schedule risk transferred to design-builder through incentive structure</li> <li>• District transfers most (not all) life-cycle performance and management risk</li> <li>• Integration risk accentuated</li> <li>• Significant procurement risk and cost</li> </ul>
Advantages	<ul style="list-style-type: none"> <li>• Accelerated implementation timeline</li> <li>• Integrated design and construction</li> <li>• Low cost of finance</li> </ul>		<ul style="list-style-type: none"> <li>• Third party financing reduces credit impact of project for District</li> <li>• Life-cycle O&amp;M addressed by private partner</li> <li>• Additivity and innovation</li> </ul>
Disadvantages	<ul style="list-style-type: none"> <li>• District bears life-cycle asset risk</li> <li>• Full responsibility for asset ownership risks remains with District (including deferred maintenance, technology, etc.)</li> <li>• Limited flexibility due to long-term contract</li> </ul>		<ul style="list-style-type: none"> <li>• Higher cost of capital than public finance;</li> <li>• More complex agreement due to financing provisions</li> <li>• Need for more sophisticated contract governance and oversight</li> </ul>

# Risk Transfer Considerations

Key Risk	PDB	PDBFOM
	Progressive Design-Build	Progressive-Design-Build-Finance-Operate-Maintain (30 years)
Finance	District	Private (or shared)
Design Risk	Private/Shared	Private/Shared
Schedule Risk	Private/Shared	Private/Shared
Cost Overruns	Private (with some exceptions)	Private (with some exceptions)
Operating Risk	District	Private
Ongoing Maintenance	District	Private
Rehabilitation	District	Private
Technology	District	Private
Asset life-cycle	District	Private
Handback	District	Private

# Some Key Considerations for the District

1. Key risks (such as cost overruns and schedule) can be / will be transferred to the private partner under both PDB and DBFOM.
2. Is there value in “bundling” project elements into a single contract or is it better to separate them? Can risks be isolated and ring-fenced or is there potential for integration issues?
3. Operations and Maintenance:
  - Potential for unnecessary redundancies
  - Does the District have the O&M expertise? Does a private operator bring specialized skills not readily available in the District?
  - Is there potential for efficiencies (either through public or private operation)
  - Can/will the District efficiently address life-cycle maintenance?
4. Balance Sheet and Credit Impact of District obligations
5. Under a P3, would the private partner bring something to the table (e.g., permitted project, water rights, rights of way) that the District needs?
6. Procurement risk



# Take-aways from “PDB or P3(PDBFOM)?” Staff Workshop

- There is no one right way.
- What does the Board want to achieve?
- Align your choice with District’s objectives.
- Remain a “doer” or become a “regulator?”
- Potential implications of privatization in a predominantly public agency region?
- The Board must be the District’s political champion.

# Staff Assessment: Aligning Objectives to Solution

District's Objective
Speed of Program Implementation
Quality of Facilities and Product Water
Control (System Integration)
Project Life-Cycle Cost
Overall District Success

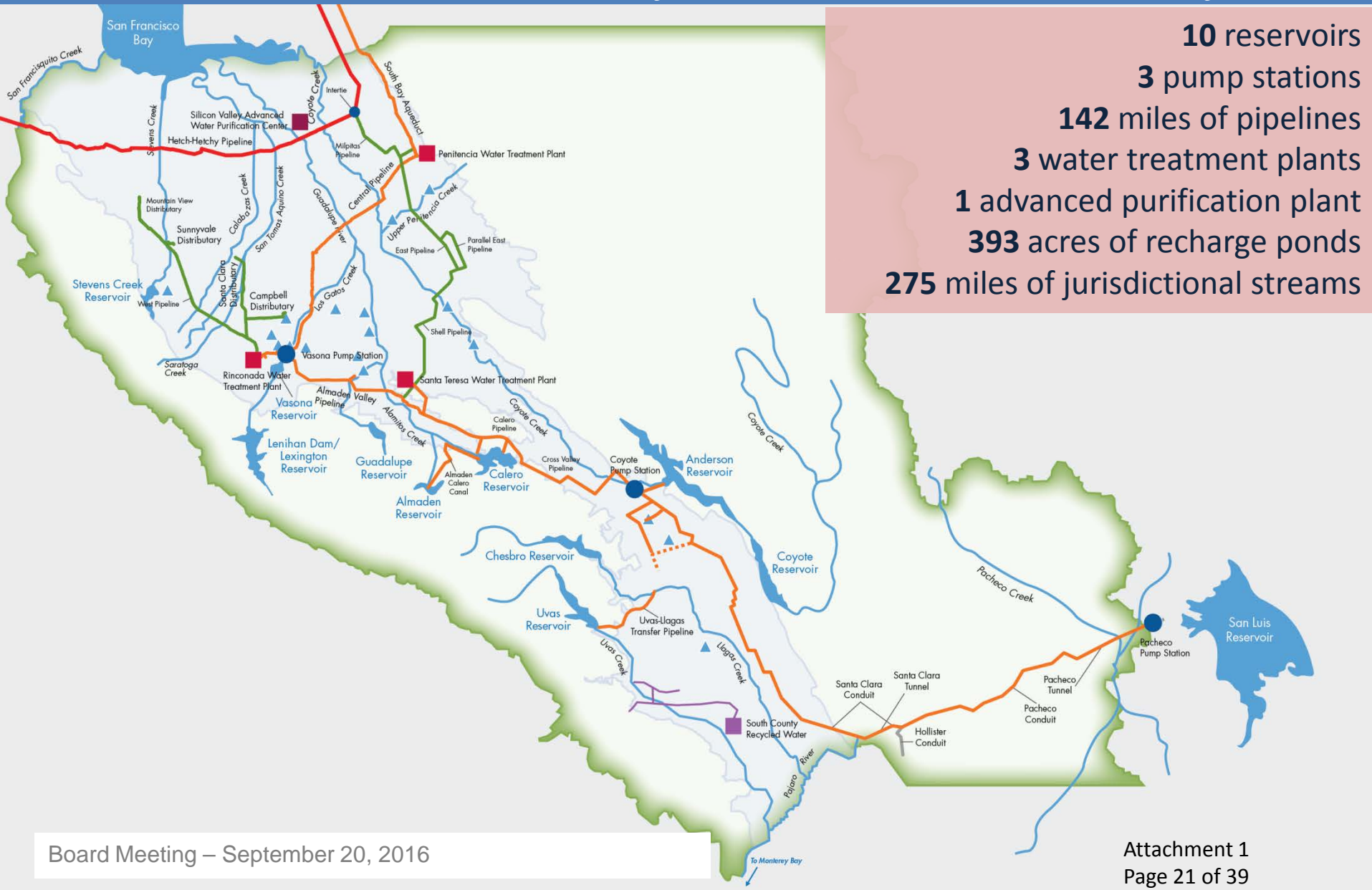
# Staff Assessment of Key Objectives – 1 and 2

District's Objective	Progressive Design Build	P3 (PDBFOM)
1. Speed	Less complex procurement; May result in quicker start to construction.	Financial incentives to finish construction quickly.
2. Quality	<ol style="list-style-type: none"><li>1. Strong owner input on design features;</li><li>2. District owns and pays for quality performance.</li></ol>	<ol style="list-style-type: none"><li>1. P3 performing O&amp;M creates incentive for reliable facility/life cycle mgmnt;</li><li>2. District pays premium for quality performance/risk transfer.</li></ol>

# Staff Assessment of Key Objectives – 3

District's Objective	Progressive Design Build	P3 (PDBFOM)
3. Control (System Integration)	<ol style="list-style-type: none"> <li>1. Effective integration of new facilities with District system: <ul style="list-style-type: none"> <li>• Staff at 8MGD SVAWPC</li> <li>• Points of delivery to recharge ponds</li> <li>• Points of delivery to raw water system (future DPR)</li> </ul> </li> <li>2. Ability to increase/decrease production cost-effectively.</li> <li>3. Flexibility in addressing many unknowns in future.</li> <li>4. District remains a “doer.”</li> </ol>	<ol style="list-style-type: none"> <li>1a. Integrating private O&amp;M functions with District staff at points of delivery.</li> <li>1b. Public O&amp;M at SVAWPC; private O&amp;M next door.</li> <li>2. Scaling production up/down an essential aspect of P3 contract.</li> <li>3. Locking in a P3 contract may limit flexibility.</li> <li>4. District takes on role of “regulator.”</li> </ol>

# Water Supply from Imported Sources and Local Reservoirs Intricately Connected in County



# Integrated Operations Requires Flexibility

- Imported water and local water supply recharge ponds and treatment plants
- Close coordination essential
  - WTP flows fluctuate by 25 MGD daily
  - Recharge ponds absorb flow
  - Daily adjustments by field operators
  - Events like San Luis Low Point affect planned operation
- FAHCE will affect stream operation
- Flexibility is key to system operation
- Potable Reuse water - integral to District system and water supply operations

**Regulating Page Ponds**

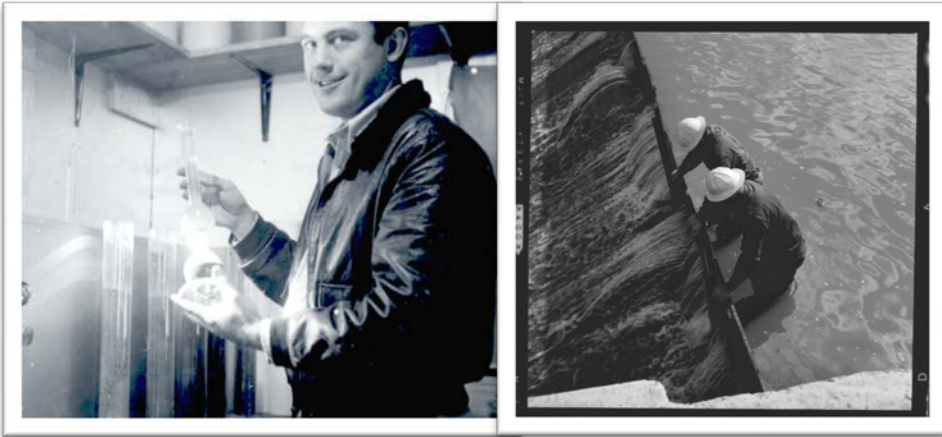


**Rinconada Water Treatment Plant**





# 80 years of O&M experience



Membrane Operator Association Training at SVAWPC

Board Meeting – September 20, 2016

- 1930s: O&M of recharge ponds
- 1960s: O&M of water treatment plants
- 1970s: O&M of pump stations
- 1980s: O&M of San Felipe System (USBR facility)
- 2000: Operation of SFPUC-SCVWD Intertie
- 2014: O&M of SVAWPC
- O&M supported by engineering and technical expertise
  - Process engineering
  - Electrical, SCADA

# Public Acceptance of Potable Reuse – District Reputation

In 2014, WaterReuse Research Foundation analyzed public perception about Potable Reuse and found:

*Those with positive attitudes toward their water agency are more accepting of Potable Reuse.*

*Risk of taking wastewater, purifying it, and recharging it into the our groundwater basin is on the District (non-transferrable).*

*District is groundwater manager for quality and quantity.*





# Staff Assessment of Key Objectives – 4

District's Objective	Progressive Design Build	P3 (PDBFOM)
4. Cost	<ol style="list-style-type: none"> <li>1. Full transparency/control over construction cost.</li> <li>2. Cost-effective integration of new facility with O&amp;M staff from District's other facilities.</li> <li>3. District must hire more O&amp;M staff.</li> <li>4. Long-term O&amp;M subject to annual budgets.</li> </ol>	<ol style="list-style-type: none"> <li>1. P3 O&amp;M agreement is key incentive for reliable facility.</li> <li>2. District pays premium for transferring O&amp;M/life-cycle risks.</li> <li>3. District must hire or re-train staff to monitor/regulate P3 performance.</li> <li>4. O&amp;M agreement assures reliable operations throughout contract term.</li> </ol>

# Financial Modeling Assumptions - Base Case

	PDB*	P3*	Comments
Design & Construction Budget (expansion & pipeline only)	\$600M	\$600M	Assume 30% funded by pay-go and 70% by debt issuance for both PDB & P3
Operating & Maintenance Budget	\$11.8M	\$11.8M	Annual esc. 3%, 30 years O&M period; assumes 100% plant capacity utilization
Debt Rate	5.50%	6.60%	P3 rate higher due to credit spread (0.80%) and AMT penalty (0.30%) vs. District AA tax-exempt rate
Equity Rate	--	10%	Based on SDCWA negotiated rate ~9.6%
Debt to Total Capital	100%	90%	
Weighted Average Cost of Capital	5.5%	6.94%	
Commercial Operations Date	2024	2024	
Revenue Coverage	2 x	1 x	P3 pmt is an operating/maint. expense which requires 1 x revenue coverage
Credit Rating	AA	BBB	Reflects difference between District's credit rating and the assumed credit rating of Special Purpose Entity delivering the Program.
Discount Rate	5.50%	5.50%	

\* Costs stated in 2016 dollars

# Scenario 1:

## O&M Cost Differential for P3

Assumptions:

Construction Cost	Same in both scenarios
O&M Cost	P3 is 20% higher*
Schedule	No delay in start of operations

**NPV cost (negative) vs benefit (positive) of P3 vs PDB (\$M)**



**\$116M Cost**  
Scenario 1

\* The present value cost of P3 versus PDB in this scenario reflects the higher financing costs of the P3 entity, and economies of scale in operations achieved in the PDB alternative (but not in the P3).

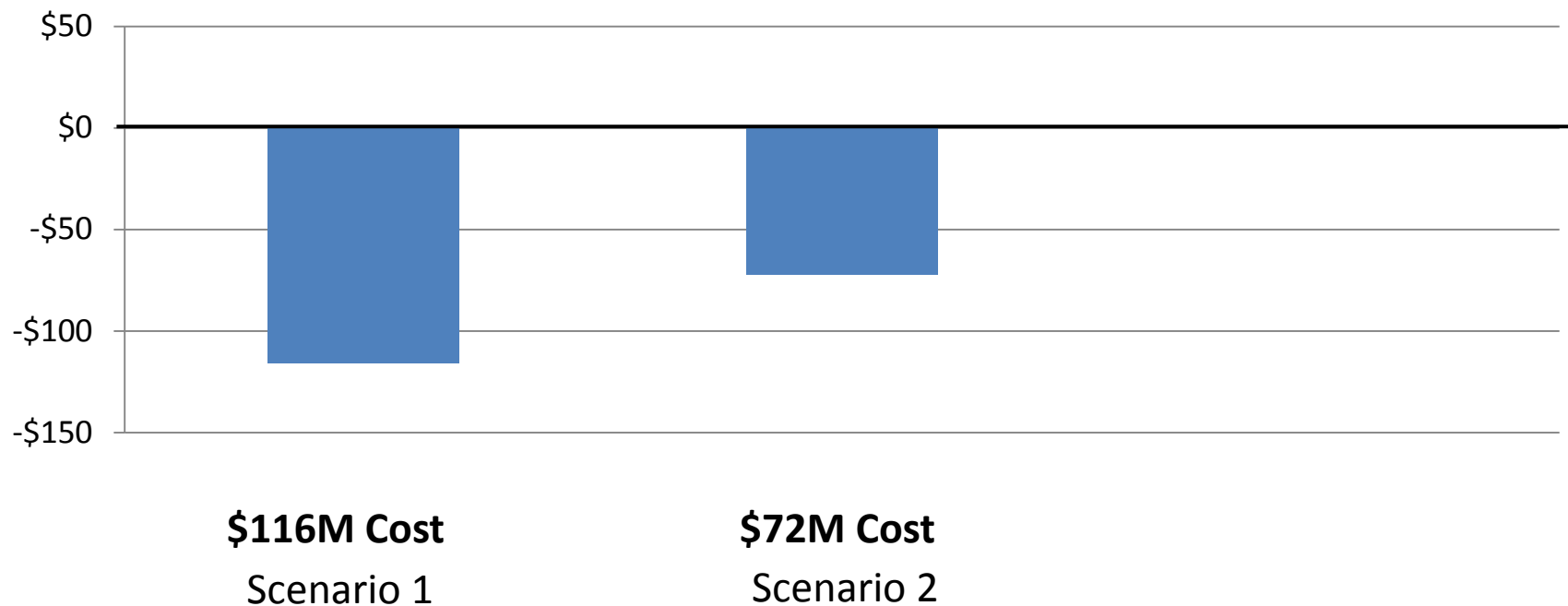
# Scenario 2:

## No Cost/Operation/Schedule Differences

Assumptions:

Construction Cost	Same in both scenarios
O&M Cost	Same in both scenarios
Schedule	No delay in start of operations

**NPV cost (negative) vs benefit (positive) of P3 vs PDB (\$M)**



Note: The present value cost of P3 versus PDB in this scenario reflects the higher financing costs of the P3 entity.

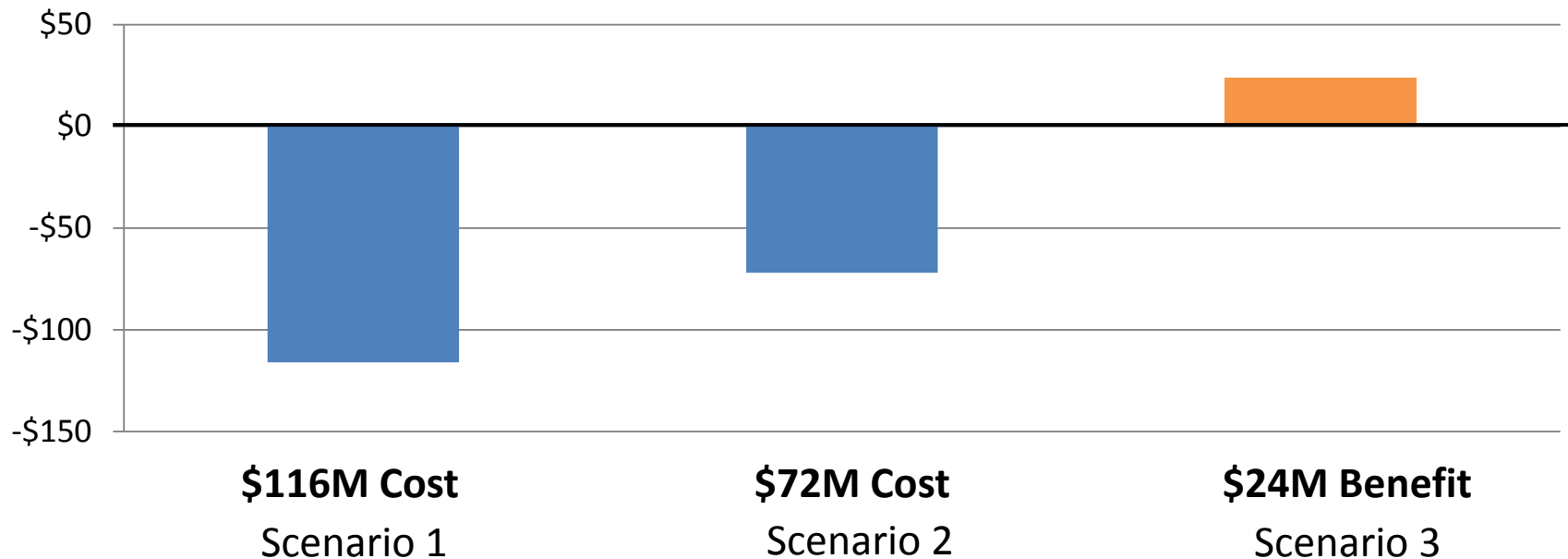
# Scenario 3:

## Cost and Schedule Differences

Assumptions:

Construction Cost	P3 is 5% lower than PDB*
O&M Cost	P3 is 20% lower than PDB*
Schedule	1 year schedule delay for both*

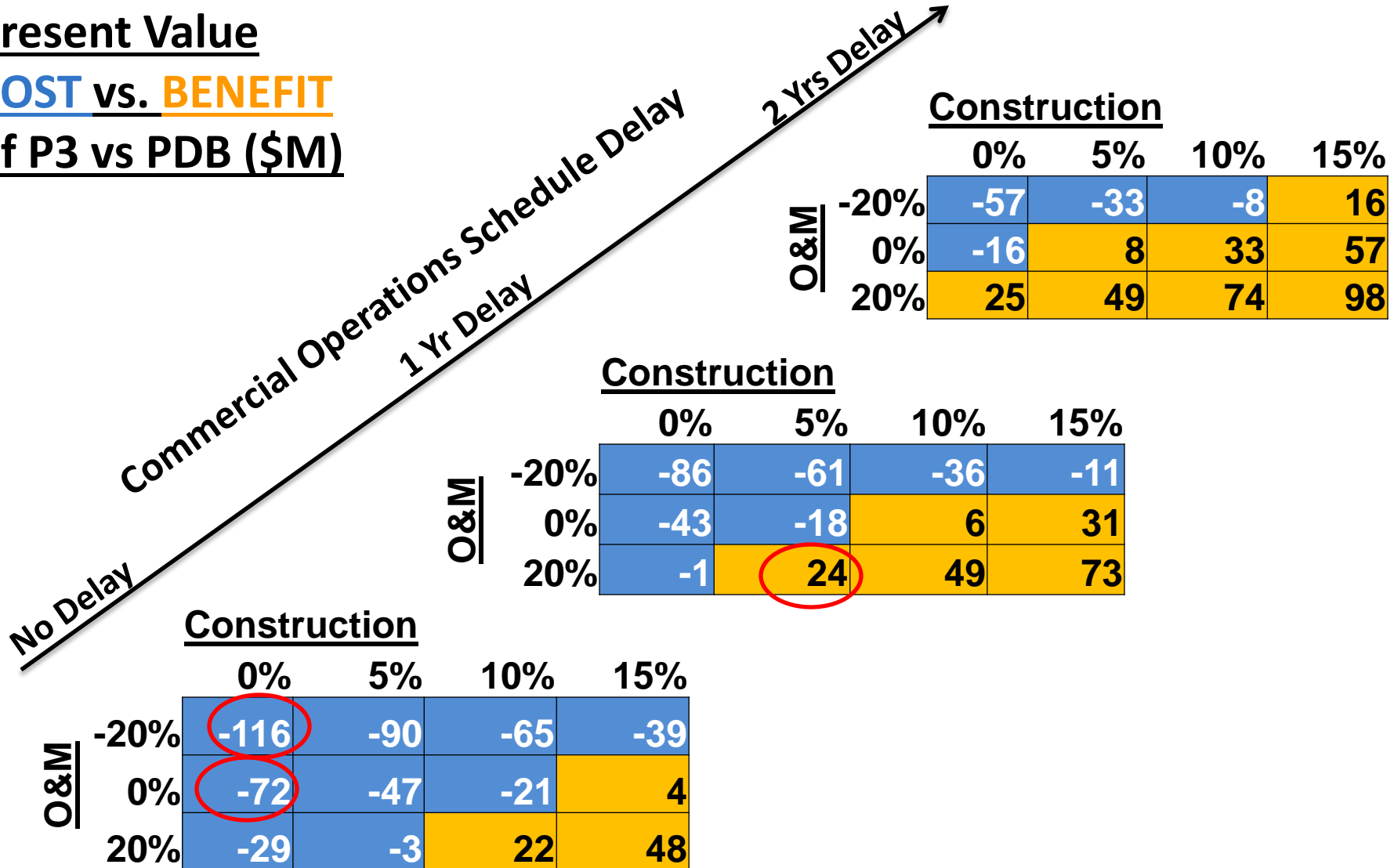
**NPV cost (negative) vs benefit (positive) of P3 vs PDB (\$M)**



\* This scenario shows that P3 may yield lower PV starting based on construction cost, O&M, and schedule differences.

# Financial Benefit of P3 Depends on Level of Project Risk and Risk Transfer

## Present Value COST vs. BENEFIT of P3 vs PDB (\$M)



# Capital Cost Performance Data

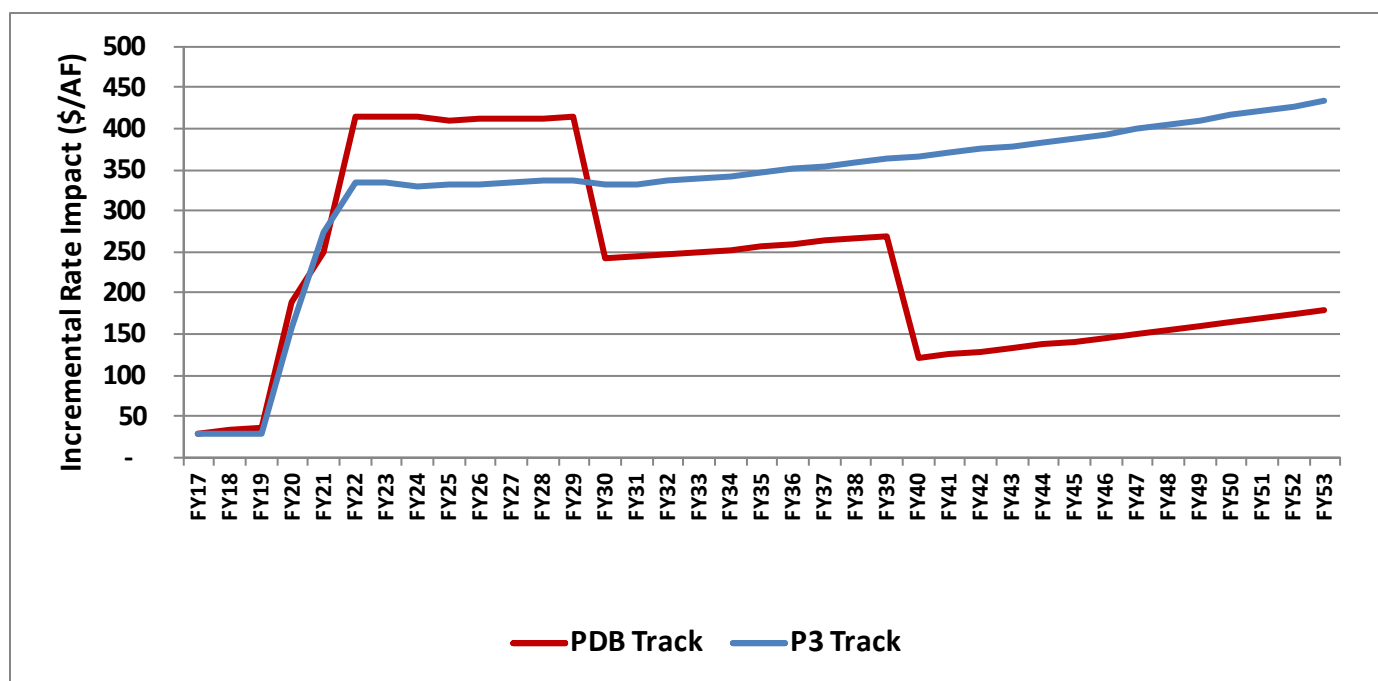
Element	Traditional Design-Bid-Build	Progressive Design-Build
Cost overruns	6%-9% average on District WUE projects since 2000	-0.9% average on recent US water and wastewater projects (-11.9% to +6.5%)*
Causes	<ul style="list-style-type: none"> <li>- Design errors/omissions</li> <li>- Owner-initiated changes</li> <li>- Changed site conditions</li> </ul>	Owner-initiated changes
Relevance	<ul style="list-style-type: none"> <li>- Low</li> <li>- Bid approach favors cost minimization and adversarial relationships</li> </ul>	<ul style="list-style-type: none"> <li>- High</li> <li>- Integration of designer and constructor with owner involvement results in greater consensus on components and overall collaboration</li> </ul>

\* Based on HDR survey of 9 PDB projects performed in the US from 2010 to 2016

# Rate Impact: Scenario 1

Assumptions:

Construction Cost	Same in both scenarios
O&M Cost	P3 is 20% higher
Schedule	No delay in start of operations



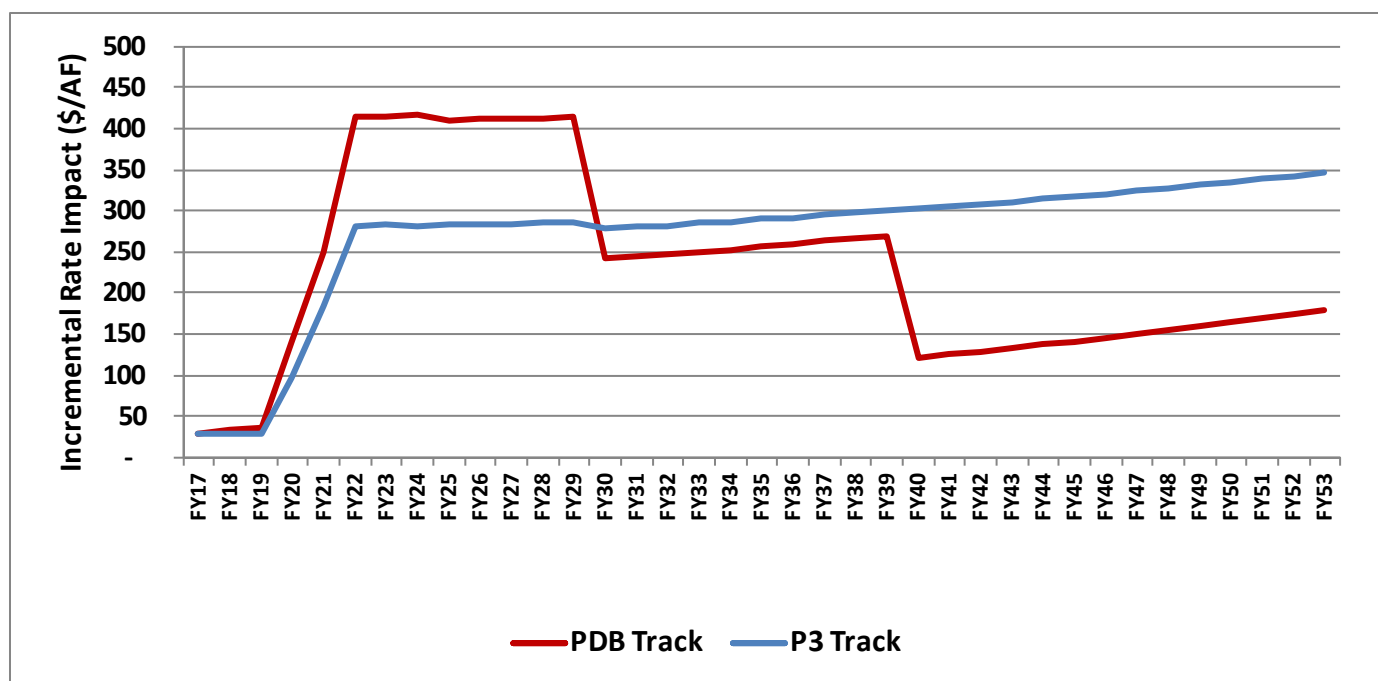
- PDB track assumes level debt service on borrowings
- Alternative financing structure (i.e. deferring principal) can reduce rate projection for PDB track, but at higher borrowing cost



# Rate Impact: Scenario 3

Assumptions:

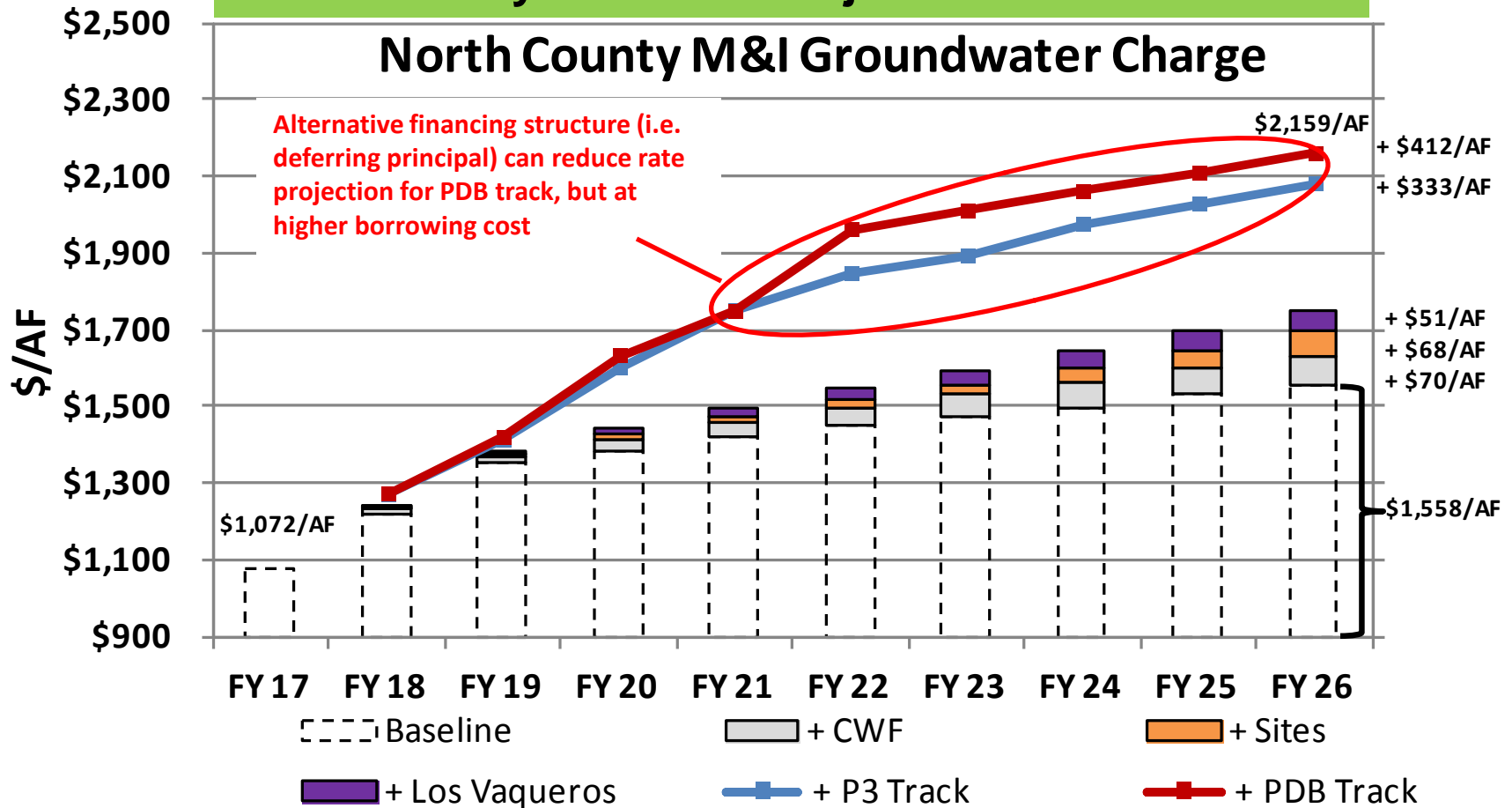
Construction Cost	P3 is 5% lower than PDB
O&M Cost	P3 is 20% lower than PDB
Schedule	1 year schedule delay for both



- PDB track assumes level debt service on borrowings
- Alternative financing structure (i.e. deferring principal) can reduce rate projection for PDB track, but at higher borrowing cost

# Financial Impacts Considering Other District Investments

## 10-Year Layered Rate Projection w/ Scenario 1



*Participation in California Water Fix (CWF), Sites Reservoir, and/or Los Vaqueros Reservoir is under consideration; no decisions yet made.*

# Staff Assessment of Key Objectives – 5

District's Objective	Progressive Design Build	P3 (PDBFOM)
5. Success	<ol style="list-style-type: none"> <li>1. Nearly identical to historical design-bid-build to external observers.</li> <li>2. Earlier rise in water rates can be mitigated in long run with financial structuring.</li> <li>3. Performance success owned by District.</li> <li>4. District perceived as champion of valuing staff and workforce development. <ul style="list-style-type: none"> <li>• Value to District for strengthening its own core functions?</li> <li>• Value of staff pride in expanding capabilities?</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>1. New process with potential ripple effects in region.</li> <li>2. Water rates slower to rise but long-term premium is paid for risk transfers.</li> <li>3. P3 performance success relieves some burdens, but District, as regulator, still owns failures.</li> <li>4. Potential union issues with P3 O&amp;M contract?</li> <li>5. Impacts of organizational /cultural change to District. <ul style="list-style-type: none"> <li>• Staff morale</li> <li>• Trust in senior leaders</li> </ul> </li> </ol>

# Why Do Agencies Utilize P3 Approaches?

1. Does the agency have the O&M expertise?
2. Does the agency have the money?
3. Does the agency have the fiscal discipline to maintain O&M budgets?
4. Does the private partner bring something to the table (e.g., permits, water rights, rights of way) that the agency needs?

# Staff Recommendation: Progressive Design-Build

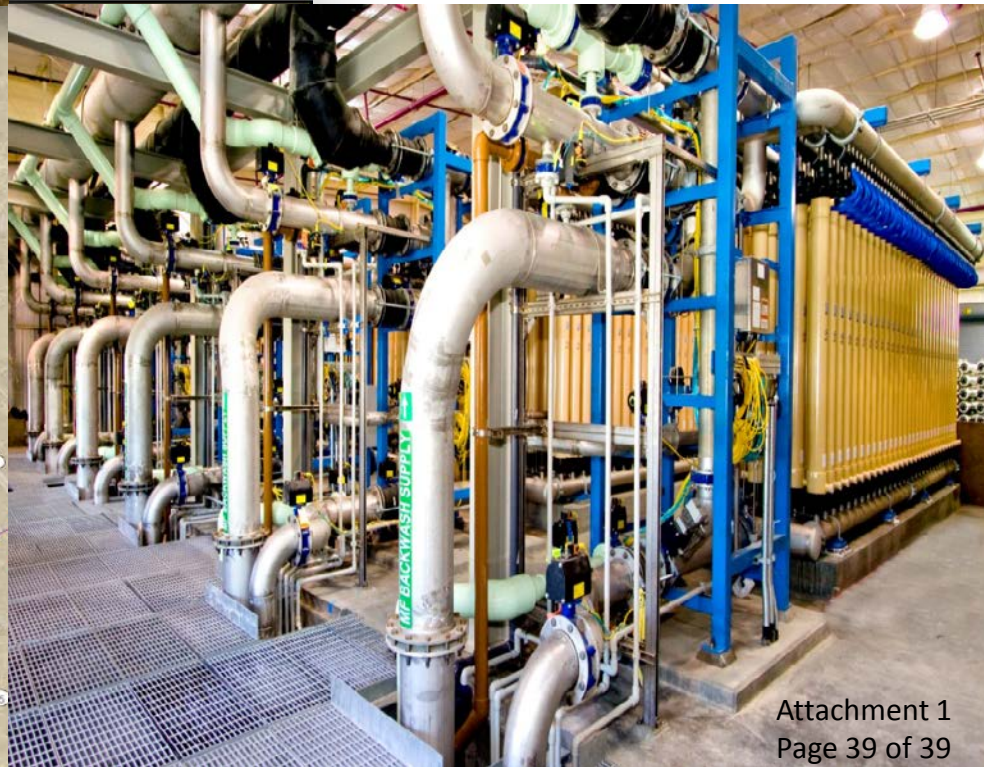
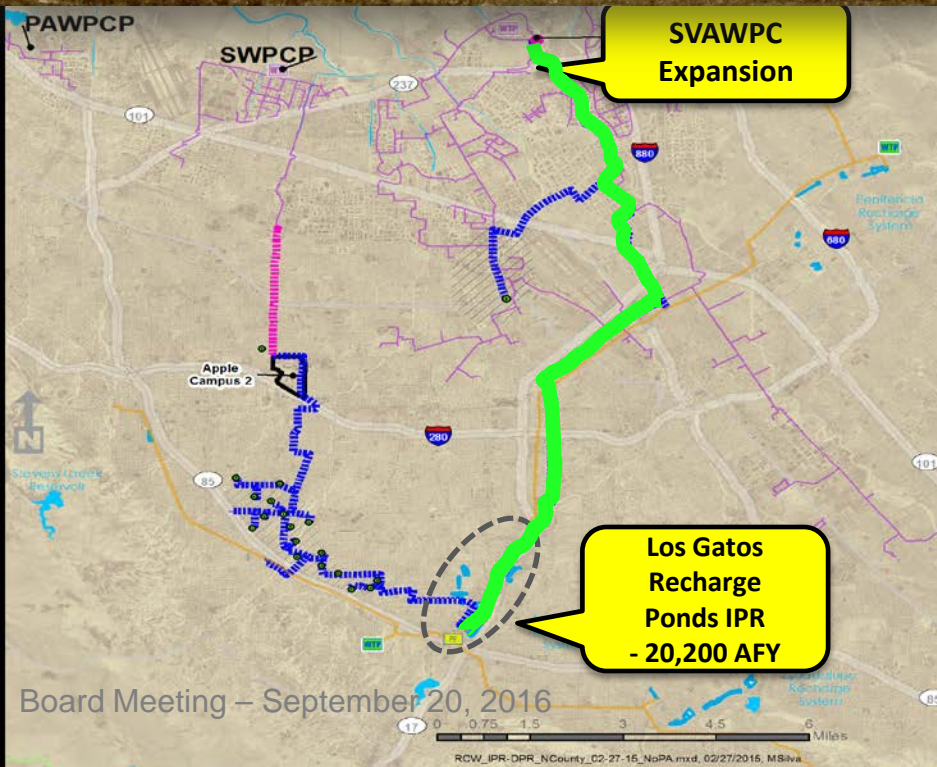
## **PDB best aligns with District's objectives:**

- PDB affords simplified contract negotiations with nearly equivalent incentive structure (GMP limits cost overruns, incentivized performance to accelerate delivery, etc.) as a P3 .
- PDB would retain District as project owner with O&M responsibilities: a “doer” vs. a water purchaser/“regulator.”
- PDB would allow District O&M control of purified water facilities and afford better management/flexibility/integration with in-county water distribution and treatment system.
- PDB would allow District to leverage its core competencies and expand workforce capabilities.
- Key cost risks associated with construction, financing, O&M can be managed.

# Recycled Water Committee Key Comments from September 7, 2016 Meeting

1. Consider privatizing existing SVAWPC **and** expanded SVAWPC operations to make a P3 more viable.
2. Concerns expressed regarding cumulative impacts of financing this Program and other water supply efforts (CalWater Fix; Sites or Los Vaqueros Reservoirs).
3. Need to characterize risk transfer, particularly for capital cost overruns.
4. Should consider PDB for Los Gatos Pipeline and P3 for expanded SVAWPC.





Board Meeting – September 20, 2016





Recycled Water Committee

Santa Clara Valley Water District

5750 Almaden Expressway

San Jose, CA 95118

**RE: Amended Agenda Item 4.1 Workshop on Expedited Purified Water Program Dual Track Procurement**

Dear Directors Estremera, Kremen and Keegan,

Poseidon Water LLC ("Poseidon"), as the P3 coordinator of one of the short listed teams for the Public - Private Partnership Purified Water Program, provides these comments on Item 4.1 on the Amended Agenda for the Santa Clara Valley Water District's (District) Recycled Water Committee.

Poseidon respectfully requests that the Committee:

1. Not recommend the selection of a procurement method at the September 7<sup>th</sup> meeting.
2. Direct staff to develop information that provides a meaningful comparison of the alternative procurement methods including the value of the risks that are transferred to each party by each approach and the impacts on groundwater production charges of the two approaches.
3. Review the staff objectives to determine whether they are consistent with Board policies and objectives.
4. At the planned Procurement Workshop to be held with the entire Board, consider a comprehensive comparison of each of the criteria outlined in the attached power point slides. Including an evaluation of risks, the allocation of risks to each party and the value of the risks that are transferred from the public to the private sector. This workshop would be most effective if it is an interactive discussion in which project stakeholders are able to participate, including the panel of experts and the short listed potential proposers.

*Procedural History*

The Recycled Water Committee has been active this year as the District Board identified the need for more Board involvement in the issues and uncertainties involved in the Expedited Purified Water Program. The Recycled Water Committee has been working closely with staff to evaluate alternative approaches to project procurement for consideration by the entire Board.

At your March 1, 2016 meeting the following items were identified by the Committee: Staff to identify assumptions, risks, options, and critical points and junctures to check in with the Board of Directors; and Staff to provide a list of all alternatives, programs, credit rating, etc., and a comparison of a full program versus an incremental program.

At the May 12th Committee meeting, the staff reported on status and identified a number of policy issues that would be considered by the Board over the next several months, as the supporting information becomes available, including deciding on the dual track procurement approach or selecting one procurement method prior to issuing Requests for Proposals (RFPs). The process for supporting the Board in making this decision would include: 1. Convene selected industry experts for primer on key

Poseidon Water LLC

5780 Fleet Street, Suite 140 Carlsbad, California 92008 Phone: (760) 655-3900 Fax: (760) 655-3901  
[www.poseidonwater.com](http://www.poseidonwater.com)



elements, relevant case studies and intensive debate. 2. Board committee/Board work-study sessions to follow and 3. Board consideration: identify one track prior to issuing RFPs.

At the Committee's July 6<sup>th</sup> meeting, staff presented the following steps for obtaining a Board decision on the project delivery method:

1. Characterization of the Key Issues (July-August): Staff will summarize all relevant information pertaining to the following questions and seek the input of independent procurement experts:
  - a. What are the **unique and particular risks** that would be transferred to a P3 entity over a PDB entity?
  - b. What is the potential **range of value** to the District of transferring those risks?
  - c. What value does private financing provide relative to debt service coverage ratio and rate impacts?
2. Work-Study Session with the Recycled Water Committee (early September): Along with independent experts, Staff will present pros/cons/case studies for both delivery methods and answer the Committee's questions as it formulates a recommendation to the Board on a project delivery method.
3. Special Board Meeting for Similar Work-Study Session (late September): Based on Committee feedback, a work-study session will be tailored for consideration of the entire Board.

At the end of the discussion on this item, Director Estremera suggested holding a 2-3-hour workshop with the Recycled Water Committee to discuss the Expedited Purified Water Program, and then subsequently bring this to the full District Board. As Poseidon's representative at that meeting, I concurred with the recommendation and with the staff's key issues for comparing the alternative delivery methods, the value of transferring risks to a P3, and the value of private financing for water rates. In addition, I suggested looking at the impact of private financing on the District's current and future credit ratings and that the Board should also consider the innovation, performance and commercial incentives provided by the P3 approach.

#### *Poseidon's Comments*

The posting of an Amended Agenda and staff report for the Committee's September 7, 2016 meeting late Friday before a three-day weekend has allowed limited opportunity for review and comment. We note that agenda item 4.1 Workshop on Expedited Purified Water Program – Dual Track Procurement had been amended from "consider and approve appropriate action," to "choose the Progressive Design/Build project delivery method for the Expedited Purified Water Program." This amended agenda package was supported by a staff report which included information from a day-long internal workshop staff convened with a group of industry experts, followed by an internal meeting wherein staff formulated the recommendation to proceed with the Progressive Design-Build based on "District objectives" established by staff.

Poseidon supported the staff's efforts in August to develop information for the Committee to use in order to determine which topics are most appropriate for consideration by the entire Board. Unfortunately, the process outlined in July was not followed in arriving at the recommendation that is now before the Committee for consideration. Included below is a list of information previously requested by the Committee that has yet to be provided. Since this information is essential to evaluating and comparing the alternative procurement approaches, it would seem to be premature for the Committee to adopt the staff's recommendation at the September 7<sup>th</sup> meeting.

While we were disappointed that the workshop with the industry experts did not take place at a Committee or Board public session, we would like to direct the committee's attention to the

recommendations of one of the experts that met with staff, Jill Jamieson (JLL Inc.), that is included in slides on Pages 8-16.

The slides also include on Page 22 of 38, a list of key risks and anticipated allocation. We cannot find in the staff information any analysis of the potential range of value to the District of transferring risks which was one of key issues identified at the July 6<sup>th</sup> Committee meeting. As one of the independent experts that met with staff has written about P3 options analysis and decision making: "*Key Question: Is the value of risks transferred via a P3 greater than the additional financing costs for the P3 procurement?*" (Michael Bennon, Presentation-P3 Options Analysis and Decision Making, 28 October 2015). The staff report identifies a list of key risks, but does not quantify those risks. The cost analyses on pages 23 to 26 do not include the value of the risk transfer and therefore do not reflect the potential benefit of the P3 approach.

Poseidon recommends that the presentations from all of the experts be provided to the entire Board prior to decision making on the selection of an approach.

Without a thorough analysis of the value of transferred risks, a judgement of the best approach is premature. Page 16 of the Staff Report summarized key information from the workshop with the industry experts:

1. **Staff Take-away from staff workshop:** *There is no one right way.*

**Poseidon Comment:** This statement highlights the importance of the Board, as decision-maker, having all of its questions addressed and receiving all of the information that has been brought together to advise the District prior to formulating a decision on the procurement method.

2. **Staff Take-away from staff workshop:** *What does the Board want to achieve?*

**Poseidon Comment:** The Board has adopted policies that provide useful guidance on this point: GP-1. The purpose of the Board, on behalf of the people of Santa Clara County, is to see to it that the District provides Silicon Valley safe, clean water for a healthy life, environment, and economy (Governance Policies of the Board). GP-2.3. The Board will further inform itself, individually and collectively, through extensive outreach to determine community wishes and through continuing education on issues relevant to the District. GP-3.1. The Board established link between the District and the public, which includes directions to the leadership of the staff, the Board Appointed Officers, as to the intended results, organizational products, impacts, benefits, outcomes, recipients, and their relative worth. E-2.1.4 Recycled Water Policy. Protect, maintain, and develop recycled water, which includes goals to: provide at least 10% of annual recycled water production as a percentage of total County water demands by 2025; developing partnerships to develop the potential for Indirect Potable Reuse (IPR) and Direct Potable Reuse (DPR); and managing, operating and maintaining recycled water assets to maximize reliability, to minimize life cycle costs and to minimize impacts to the environment.

3. **Staff Take-away from staff workshop:** *Align your choice with District's objectives.*

**Poseidon Comment:** As identified above, maximizing reliability, minimizing life cycle costs and minimizing impacts to the environment have been identified as District objectives. The key objectives that staff has identified in the staff report of speed, quality, control, cost, and success should be reviewed by the Committee to see if they align with Board policies and objectives.

4. **Staff Take-away from staff workshop:** *Remain a "doer" or become a "regulator".*

**Poseidon Comment:** It would be interesting to know if this distinction came from comments from one of the experts or if it was developed by staff. The District has always used private sector resources to accomplish capital projects. The P3 procurement method offers an alternative approach to accomplishing the District's objectives that should be evaluated on its merits rather than dismissed on the basis of an overly simplistic us versus them argument.

5. **Staff Take-away from staff workshop:** *Potential implications of privatization in a predominantly public agency region?*

**Poseidon Comment:** It would seem that in Silicon Valley there would be an appreciation of public agencies being able to form partnerships with the private sector to leverage investments in needed large-scale capital projects. The partnerships identified in Board policies and executive interpretation include private as well as public entities. *Board Policy GP-1.3. Collaboration with government, academic, private, non-governmental, and non-profit organizations is integral to accomplishing the District mission.*

6. **Staff Take-away from staff workshop:** *The Board must be the District's political champion.*

**Poseidon Comment:** Board policies specify the role of the Board as the link between the District and the public. In this governance role the Board is politically accountable for appropriate organizational performance.

In closing, Poseidon respectfully requests that the Committee:

1. Not recommend the selection of a procurement method at the September 7<sup>th</sup> meeting.
2. Direct staff to develop information that provides a meaningful comparison of the alternative procurement methods including the value of the risks that are transferred to each party by each approach and the impacts on groundwater production charges of the two approaches.
3. Review the staff objectives to determine whether they are consistent with Board policies and objectives.
4. At the planned Procurement Workshop to be held with the entire Board, consider a comprehensive comparison of each of the criteria outlined in the attached power point slides. Including an evaluation of risks, the allocation of risks to each party and the value of the risks that are transferred from the public to the private sector. This workshop would be most effective if it is an interactive discussion in which project stakeholders are able to participate, including the panel of experts and the short listed potential proposers.

Poseidon will have a representative at the September 7<sup>th</sup> meeting and will have more detailed comments for the Committee at that time.

Sincerely,



Stan Williams

Vice-President, Project Development

Poseidon Water

# P3 vs. Progressive Design-Build (“PDB”)

Benefit	P3	PDB
<b>Control of Process during Design and Construction Phase/ Design/Quality</b>	<ul style="list-style-type: none"> <li>• Project defined in collaboration with the District based on conceptual level of engineering</li> <li>• P3 Entity responsible for solution based on scope book parameters (quality of materials, engineering standards, performance metrics)</li> <li>• District to have revision rights</li> <li>• Minimum chance of change orders</li> </ul>	<ul style="list-style-type: none"> <li>• District has total control of project definition</li> <li>• Public entity to pay for Design as the Project progresses</li> <li>• Open to change orders during construction because District directed design</li> </ul>
<b>Project Cost</b>	<ul style="list-style-type: none"> <li>• Open book approach on getting to final Water Price</li> <li>• Water Purchase Agreement (“WPA”) reflects water price and risk allocation</li> </ul>	<ul style="list-style-type: none"> <li>• Open book approach on getting to construction cost</li> <li>• District to manage contract</li> <li>• Project Design-Build contract reflects project construction costs</li> </ul>
<b>Cost Responsibility during Development and Construction</b>	<ul style="list-style-type: none"> <li>• P3 Entity pays for process of arriving at water price</li> </ul>	<ul style="list-style-type: none"> <li>• District pays for process to arrive at project construction cost</li> </ul>
<b>Cost of Funding</b>	<ul style="list-style-type: none"> <li>• Funding provided by P3 entity</li> <li>• Higher cost of funding but potential for lower lifecycle cost based on value-for-money analysis (risk, cost of delay, etc.)</li> <li>• Low cost tax-exempt debt also available to P3 entity</li> </ul>	<ul style="list-style-type: none"> <li>• Publicly funded</li> <li>• Lower cost of funding, but higher risk of increased water costs due to delays, construction and operation performance</li> </ul>
<b>Water Price Certainty</b>	<ul style="list-style-type: none"> <li>• WPA provides water price certainty</li> </ul>	<ul style="list-style-type: none"> <li>• Ultimate water price is undetermined</li> </ul>

# P3 vs. Progressive Design-Build (“PDB”)

Benefit	P3	PDB
<b>Borrowing Capacity</b>	<ul style="list-style-type: none"> <li>Maintains borrowing capacity as Project payments are considered an operating cost</li> </ul>	<ul style="list-style-type: none"> <li>Use of balance sheet impacts credit rating, debt metrics and reserve requirements</li> <li>Takes resources away that could be used for other capital improvements/ maintenance projects</li> </ul>
<b>Performance Payments</b>	<ul style="list-style-type: none"> <li>P3 Entity paid only if the Project performs</li> </ul>	<ul style="list-style-type: none"> <li>District to make fixed and debt payments even if Project does not perform</li> </ul>
<b>Water Supply</b>	<ul style="list-style-type: none"> <li>District controls water supply sources and amounts</li> <li>Pays for water under minimum commitment only if Project is performing even if water is not taken</li> </ul>	<ul style="list-style-type: none"> <li>District controls water supply sources and amounts</li> <li>Pays for debt service and fixed O&amp;M costs even if water is not taken regardless of Project performance</li> </ul>
<b>Project Risk</b>	<ul style="list-style-type: none"> <li>Majority of risk is transferred to P3 entity</li> </ul>	<ul style="list-style-type: none"> <li>Majority of risk stays with the District</li> </ul>
<b>Efficiency and innovation</b>	<ul style="list-style-type: none"> <li>WPA includes efficiency/ innovation incentives for P3 entity to lower cost</li> </ul>	<ul style="list-style-type: none"> <li>Structure creates little incentive to improve efficiency and lower cost</li> </ul>
<b>O&amp;M</b>	<ul style="list-style-type: none"> <li>P3 entity penalized/incentivized based on operating guarantees in the WPA</li> <li>District to have O&amp;M oversight/ step-in rights</li> <li>P3 entity has risk of operations cost overruns</li> </ul>	<ul style="list-style-type: none"> <li>District controls operations</li> <li>District has risk of operating cost overruns.</li> </ul>
<b>Project Ownership</b>	<ul style="list-style-type: none"> <li>District can maintain ownership of assets by structuring WPA as Service Agreement</li> <li>Project transferred to District at end of WPA term</li> </ul>	<ul style="list-style-type: none"> <li>District maintains ownership of the assets</li> </ul>

**From:** [Megan Matson](#)  
**To:** [Natalie Dominguez](#)  
**Subject:** Table Rock Comments, PDB v P3 Staff Report, Purified Water Program  
**Date:** Wednesday, September 07, 2016 11:48:26 AM  
**Attachments:** [Table Rock Comments Santa Clara Staff Report 9-7-16.doc](#)

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Greetings and thank you for the opportunity to submit comments to the Recycled Water Committee.

Very best,

Megan

<Table Rock Comments Santa Clara Staff Report 9-7-16.doc>

Megan Matson, Partner  
**Table Rock Capital**  
150 California Street, #600  
San Francisco, CA 94111

415-497-2320 text/cell  
[mmatson@t-rockcap.com](mailto:mmatson@t-rockcap.com)

**Comments • 9-7-16**

**Santa Clara Valley Water District Staff Report**

**Recycled Water Committee**

**Expedited Purified Water Program Dual Track Procurement**

**Progressive Design Build v. P3**

**Prepared by Table Rock Capital, P3 Lead, Silicon Valley New Water Partners**



**Attn: Natalie Dominguez, Board Administrative Assistant, Office of the Clerk of the Board**

**Via Email: [ndominguez@valleywater.org](mailto:ndominguez@valleywater.org)**

Greetings –

This morning we received an invitation to comment by noon on the Purified Water Program Staff Report that came out over the Labor Day weekend. This Report recommends a Progressive Design Build procurement to the Recycled Water Committee, and rejects a P3. As the P3 lead on the Silicon Valley New Water Partners consortium, Table Rock has a suggestion and several corrections to submit for the Committee's consideration.

**I.** First, Table Rock suggests that the P3 direction can be selected without giving up the option of a publicly financed, conventionally delivered Progressive Design Build project, at a later GMP off-ramp point. The Progressive Design Build direction, however, cannot be selected and still produce for Council the definitive construction cost savings, operations and maintenance cost savings, and actual cost of capital implications of a P3. The Progressive Design Build with a P3 financing business case would be developed in open book contrast to the Progressive Design Build conventionally delivered, as part of the first phase work product that is produced by the consortium on the P3 track for SCVWD. This work product includes a market-ready design solution for either delivery, with an alternative financing and delivery option. It is at that GMP point under the Table Rock P3 that the Council would make an informed, data-driven decision on whether to self-finance the Progressive Design Build solution, or choose the risk transfer and performance of an alternatively financed and delivered Progressive Design Build. Table Rock's approach (as currently being implemented in both Rialto, California's Wastewater Treatment Plant Progressive Design Build and in the two-phase P3 public-private comparator commissioned by the City of Wichita, Kansas) enables a firm off-ramp for SCVWD should the desired degree of lifecycle cost savings and desired cost of capital not be achieved under the P3 delivery scenario.

**II.** Second, Table Rock sees in the Reports concluding statements a misunderstanding of the continued public role as "Doer" not "Regulator" under a hybrid P3 partnership such as that practiced by Table Rock. In both Rialto and Wichita, the City's staff, engineering advisors, finance staff and elected leadership are all consistently and intensively engaged in the design, strategy, expenditures and planning regarding every aspect of the water and wastewater systems, both on the capital projects side, the asset management aspect, and in the operations and maintenance. Table Rock expects a similarly empowered and directive role for staff and leadership within the design and implementation of the Purified Water Program, just as SCVWD would experience under a conventionally delivered Progressive Design Build. The difference under P3 would lie in the degree of risk transfer and associated lifecycle cost savings and guaranteed performance that the two partners, public and private, would jointly define and agree upon at the front end of a P3 agreement.

Third, the Staff Report shows multiple scenarios for PDB v. P3, with construction cost savings ranging from flat to 5% savings under P3, and O&M costs ranging from 20% more costly, to 20% cost savings. Table Rock suggests that this 40% swing across scenarios does not reflect a decision-making degree of certainty. The one accelerated way to determine whether SCVWD can attain 20% O&M savings or not is to pursue Table Rock's hybrid P3 approach, where an indicative GMP is developed not just for the construction cost savings, but for the lifecycle cost of capital and the operations and maintenance cost savings. Only under the comparative P3 track can these NPV comparisons be grounded in indicative figures, and support a more data-driven decision.

Finally, a common public sector bias in the United States against private financing of public sector infrastructure appears in the Staff Report, based primarily on the argument that tax-exempt debt is cheaper than taxable debt. The first development of note that establishes the out-of-date nature of this bias is the



increasingly prevalent use of tax-exempt Private Activity Bonds and tax-exempt financing more generally, in P3. In Table Rock's research for the City of Wichita, ample access to tax-exempt PABs has been established, with an early indicative spread of 29 basis points between the cost of Wichita self-financing, and a P3 consortium financing. Second, the tax-exempt vs. taxable financing differential makes a comparatively small contribution to the total lifecycle cost of any public infrastructure project. The cost of capital differential should therefore be evaluated as an important but not definitive factor within the overall cost profile of the project. Recognizing that public-private partnerships commonly generate 10% to 30% in lifecycle cost savings, any objective comparator of delivery costs should establish whether or not the lifecycle cost savings are present to a degree sufficient to overwhelm the tax-exempt vs. taxable financing differential.

III. The final consideration affecting this cost of capital evaluation is that marked volatility in the spread between taxable and tax-exempt bond yields in recent years has significantly called into question the cost of capital advantage of tax-exempt financing. Factors such as the '08-'09 recession, multiple municipal bankruptcies, and credit agencies incorporating credit considerations such as pension obligations into their municipal ratings have all contributed to these newly unpredictable spreads between tax-exempt and taxable financing.

### Cost of Financing Differential & Lifecycle Cost Savings

Infrastructure project lifecycle cost components include three major categories of expense:

- Initial Capital Investment 5% - 25%
- Annual Operations & Maintenance Expense 50% - 75%
- Cost of Capital (Financing Cost) 10% - 30%

The graph below illustrates this point and shows that on numerous occasions since 2008, tax-exempt yields have been higher than taxable yields.



When viewed through a public-private comparator, it is clear that in cases where a 15% to 30% lifecycle cost savings in engineering, construction, and operations through a P3 delivery can be achieved, these savings can more than overtake the cost of capital advantages offered by tax-exempt financing.

In closing, Table Rock suggests that an open workshop with the P3 leads Brookfield and Table Rock could greatly enhance the level of informed discussion between the PDB and P3 options.

Sincerely,

Peter Luchetti, Managing Partner

Megan Matson, Partner

Table Rock Capital

## Total Construction Change Orders (CCO) - WUE Projects (2000-Present)

#	CONTR. NO.	Project No.	PROJECTS UNDER \$10 M	BID AMOUNT	FINAL AMOUNT	TOTAL CCO	% OF ORIG. AMT.
1	C0597	91094009	South County Recycled Water Pipeline, Phase 1B Camino Arroyo Service Line	\$ 1,807,950.00	\$ 1,987,900.00	\$ 179,950.00	9.95%
2	C0593	95084001	Milpitas Pipeline Inspection & Rehabilitation	\$ 1,615,600.00	\$ 1,774,340.94	\$ 158,740.94	9.83%
3	C0590	92534003	Kirk Diversion Dam Replacment and Fish Screen Project	\$ 809,670.00	\$ 883,634.61	\$ 73,964.61	9.14%
4	C0589	93284030	STWTP Incompatible Material Stage II Project	\$ 3,270,000.00	\$ 3,606,552.37	\$ 336,552.37	10.29%
5	C0587	94084006	Microwave Telecommunications Systems	\$ 715,773.85	\$ 733,702.85	\$ 17,929.00	2.50%
6	C0586	95084001	Stevens Creek Pipeline	\$ 801,398.00	\$ 911,129.33	\$ 109,731.33	13.69%
7	C0584	95084001	Santa Clara, Campbell & Mtn View Distributaries P/L Rehab Project	\$ 1,058,900.00	\$ 1,150,649.16	\$ 91,749.16	8.66%
8	C0583	94084005	Water Protection Project	\$ 5,865,000.00	\$ 5,839,901.75	\$ (25,098.25)	-0.43%
9	C0581	93291099	RWTP Boiler Replacement Project	\$ 433,955.00	\$ 460,050.00	\$ 26,095.00	6.01%
10	C0579	93284030	STWTP Incompatible Materials - Valves and Grading Project	\$ 228,000.00	\$ 247,234.00	\$ 19,234.00	8.44%
11	C0578	93284030	STWTP Incompatible Materials - Coating Project	\$ 341,100.00	\$ 347,335.74	\$ 6,235.74	1.83%
12	C0577	94344006	East Pipeline Rehab Patt to Piedmont & Expansion Joint Project	\$ 598,500.00	\$ 522,231.82	\$ (76,268.18)	-12.74%
13	C0575	92614004	Robert W. Gross Pond 1A Fish Screen Project	\$ 282,943.00	\$ 300,253.80	\$ 17,310.80	6.12%
14	C0574	93234031	PWTP Maintenance Building Project	\$ 1,426,600.00	\$ 1,503,861.07	\$ 77,261.07	5.42%
15	C0573	91094008	South County Recycled Water Pipeline, Short-Term, Ph 1A Project	\$ 1,144,907.00	\$ 1,295,407.16	\$ 150,500.16	13.15%
16	C0572	93294054	RWTP Primary Electrical, Standby Power, Trunk Cables Upgrade	\$ 3,877,000.00	\$ 4,009,615.64	\$ 132,615.64	3.42%
17	C0571	91214008	Pacheco Pumping Plant Tank Phase 2 Project	\$ 338,900.00	\$ 338,900.00	\$ -	0.00%
18	C0570	92144002	Santa Clara Conduit Reach 3 Rehabilitation Project	\$ 280,489.00	\$ 244,425.71	\$ (36,063.29)	-12.86%
19	C0569	92764009	Almaden Valley P/L Repair at Alamitos Ck Project	\$ 279,750.00	\$ 301,754.51	\$ 22,004.51	7.87%
20	C0568	92764009	Vasona Pump Station Pavement Repairs and Improvements	\$ 75,338.00	\$ 71,953.28	\$ (3,384.72)	-4.49%
21	C0566	94344006	East Pipeline Rehabilitation Project Ocala Avenue to Aborn Avenue	\$ 387,000.00	\$ 348,450.85	\$ (38,549.15)	-9.96%
22	C0561	93294055	RWTP Road Repairs and Improvements Project	\$ 172,374.00	\$ 178,428.44	\$ 6,054.44	3.51%
23	C0558	94344006	East Pipeline Rehabilitation Project Patt Avenue to Ocala Avenue	\$ 489,100.00	\$ 473,683.00	\$ (15,417.00)	-3.15%
24	C0555	94364002	West Pipeline Rehabilitation Project	\$ 741,990.00	\$ 784,895.77	\$ 42,905.77	5.78%
25	C0553	93294040	Voice and Data at RWTP and Vasona Pump Station Project	\$ 683,000.00	\$ 697,352.00	\$ 14,352.00	2.10%
26	C0551	93294050	RWTP Clarifier Rehabilitation System Project	\$ 3,683,960.00	\$ 3,802,295.06	\$ 118,335.06	3.21%
27	C0550	93294029	RWTP Chemical Systems Upgrade Project	\$ 1,965,200.00	\$ 2,078,108.94	\$ 112,908.94	5.75%
28	C0548	91854002	Jacques Gulch Restoration Project	\$ 1,877,809.00	\$ 2,012,711.50	\$ 134,902.50	7.18%
29	C0547	93234033	PWTP Standby Power System Upgrade Project	\$ 1,560,000.00	\$ 1,575,123.08	\$ 15,123.08	0.97%
30	C0546	93234036	PWTP Backwash Pump Replacement Project	\$ 699,000.00	\$ 870,693.64	\$ 171,693.64	24.56%
31	C0544	93294045	RWTP Valves Replacement Project	\$ 2,279,699.00	\$ 2,543,741.94	\$ 264,042.94	11.58%
32	C0543	91214008	Pacheco Pumping Plant Regulating Tank Project	\$ 1,035,000.00	\$ 1,126,331.93	\$ 91,331.93	8.82%
33	C0533		RWTP Catch Basin 2 Reservoir Overflow Pipe	\$ 42,800.00	\$ 37,800.00	\$ (5,000.00)	-11.68%
34	C0526	93234037	PWTP Landscaping & Site Improvement	\$ 2,624,102.00	\$ 2,611,571.13	\$ (12,530.87)	-0.48%
35	C0522	91084010	Dam Instrumentation Project, Phase 1	\$ 2,103,045.00	\$ 2,049,091.16	\$ (53,953.84)	-2.57%
36	C0520	93294044	RWTP Caustic Soda Feed System Replacement	\$ 674,638.00	\$ 636,745.46	\$ (37,892.54)	-5.62%
37	C0511	922607	Vasona Addition and ADA Modification	\$ 410,701.00	\$ 327,975.81	\$ (82,725.19)	-20.14%
38	C0510	923702	Raw Water Control System Upgrade	\$ 848,317.00	\$ 1,209,017.00	\$ 360,700.00	42.52%
39	C0507	945002	RWTP Back-up Disinfection Proj. & Rinco. Reser. Roof Rehab	\$ 6,841,500.00	\$ 6,787,900.21	\$ (53,599.79)	-0.78%
40	C0498	912203	Sta. Clara Tunnel Landslide Installation Of Second Pier Wall	\$ 358,979.00	\$ 741,918.71	\$ 382,939.71	106.67%
41	C0496	932933	Plant Water System Upgrade At RWTP	\$ 1,977,890.00	\$ 2,205,762.56	\$ 227,872.56	11.52%
42	C0487	943801	PWTP Modulating Valve Project	\$ 1,983,000.00	\$ 2,170,828.18	\$ 187,828.18	9.47%
43	C0486	932829	Clearwell Baffle Installation At STWTP	\$ 321,500.00	\$ 296,706.00	\$ (24,794.00)	-7.71%
44	C0483	922503	Central Pipeline Modifications @ Berryesa Rd. & Capitol Ave.	\$ 124,400.00	\$ 121,400.00	\$ (3,000.00)	-2.41%

## Total Construction Change Orders (CCO) - WUE Projects (2000-Present)

45	C0476	910806	Lenihan Dam Piezometer & Inclinator Inst. - Package B2	\$ 295,949.00	\$ 272,247.00	\$ (23,702.00)	-8.01%
#	CONTR. NO.	Project No.	PROJECTS UNDER \$10 M (cont'd)	BID AMOUNT	FINAL AMOUNT	TOTAL CCO	% OF ORIG. AMT.
46	C0472	923002	Almaden Valley Pipeline Cathodic Protection System	\$ 97,537.00	\$ 106,037.00	\$ 8,500.00	8.71%
47	C0471	912203	Santa Clara Tunnel Landslide Slope Stabilization	\$ 368,915.00	\$ 404,302.00	\$ 35,387.00	9.59%
48	C0470	943302	Milpitas Pipeline Relocation	\$ 1,166,280.00	\$ 1,151,722.54	\$ (14,557.46)	-1.25%
49	C0466	941701	Construction Of San Tomas Injection Facility	\$ 559,350.00	\$ 554,944.00	\$ (4,406.00)	-0.79%
50	C0465	912203	Santa Clara Tunnel Landslide Conduit Stabilization Project	\$ 230,507.00	\$ 255,358.00	\$ 24,851.00	10.78%
<b>Totals:</b>				<b>61,855,315.85</b>	<b>64,963,976.65</b>	<b>3,108,660.80</b>	<b>283.99%</b>

Average Percentage of Construction Change Orders by Project =  $283.99\% \div 50 = \underline{5.7\%}$

The Total Construction Change Order Amount (\$3M) as a percentage of the Total Bid Amount (\$62M) =  $\$3,108,660.80 \div \$61,855,315.85 = \underline{5\%}$

#	CONTR. NO.	Project No.	PROJECTS OVER \$10 M	BID AMOUNT	FINAL AMOUNT	TOTAL CCO	% OF ORIG. AMT.
1	C0567	91184008	South Bay Advanced Recycled Water Treatment Facility	\$ 42,388,000.00	\$ 52,702,386.40	\$ 10,314,386.40	24.33%
2	C0557	91954001	Pacheco Pumping Plant ASD Replacement Project	\$ 11,557,000.00	\$ 11,738,501.15	\$ 181,501.15	1.57%
3	C0528	91904005	Lenihan Dam	\$ 39,173,160.00	\$ 37,850,644.81	\$ (1,322,515.19)	-3.38%
4	C0525	93404003	New Water Quality Lab	\$ 17,540,329.29	\$ 17,802,254.95	\$ 261,925.66	1.49%
5	C0497		Penitencia Water Treatment Plant TWIP Stage 2	\$ 33,768,999.00	\$ 42,865,860.00	\$ 9,096,861.00	26.94%
6	C0493	932828	Santa Teresa Water Treatment Plant TWIP Stage 2	\$ 39,047,000.00	\$ 39,707,000.00	\$ 660,000.00	1.69%
<b>Totals:</b>				<b>183,474,488.29</b>	<b>202,666,647.31</b>	<b>19,192,159.02</b>	<b>52.65%</b>

Average Percentage of Construction Change Orders by Project =  $52.65\% \div 6 = \underline{8.8\%}$

The Total Construction Change Order Amount (\$19M) as a percentage of the Total Bid Amount (\$183M) =  $\$19,192,159.02 \div \$183,474,488.29 = \underline{10.5\%}$

### ALL WUE PROJECTS

**Combined Totals from tabels above:      \$245,329,804.14      \$267,630,623.96      \$22,300,819.82      336.64%**

Average Percentage of Construction Change Orders by Project =  $283.99\% + 52.65\% = 336.64\%$ ;  $336.64\% \div 56 = \underline{6\%}$

The Total Construction Change Order Amount (\$22M) as a percentage of the Total Bid Amount (\$245M) =  $\$22,300,819.82 \div \$245,329,804.14 = \underline{9.1\%}$