



Valley Water

Clean Water • Healthy Environment • Flood Protection



Board Study Session on Scope and Timing of Purified Water Program

June 16, 2020

Agenda

- Board questions from April 28, 2020
- Key Success Factors
- Alternative Paths
 - Description
 - Pros-Cons
 - Rate Impacts
 - Funding Alternatives
- Procurement Discussion
- Next Steps

Board Questions from April 28, 2020

1. Given current constraints on water rates, when should the Purified Water Program be implemented?
2. Given the decrease in overall water use, what size Purified Water project should be constructed?

Alternative Paths Forward

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Path A

- Immediate implementation of a project based on treated wastewater supply agreement(s) in place

Path B

- Maintain current schedule in Capital Improvement Plan (CIP) and develop project(s) based on results of the five key success factors

Key Success Factors



Solidify Partnerships



Develop Comprehensive Regional Plans



Right-size Program



Ascertain Regulations



Reverse Osmosis Concentrate (ROC) Solutions

Changing Conditions

- Direct Potable Reuse (DPR) regulations anticipated 2023
- Demand trends under review
- Imported water reliability remains uncertain
- COVID impacts
 - Local economy
 - Public official priorities
- Public acceptance of DPR

Key Success Factors - Outstanding Issues



Solidify Partnerships

Willingness
Priorities



Develop Comprehensive
Regional Plans

Technical & economic
analysis
Stakeholder input



Right-size Program

Demands trending lower
Uncertainties in imported
water



Ascertain Regulations

DPR regs. anticipated 2023
Need to assess



ROC Solutions

Review of costs and
regulatory support
Agency agreements

Key Success Factors – Path A Implications



Solidify Partnerships

Lock into agreement(s) in place in 2020



Develop Comprehensive Regional Plans

Move ahead of Countywide Reuse Plan
Prioritize partnership discussions



Right-size Program

Revisit no-regrets analysis
Implement smallest cost-effective project



Ascertain Regulations

Lock in Indirect Potable Reuse (IPR) project
Regulatory support appears achievable now



ROC Solutions

Implement baseline project and monitor triggers

Project Right-size Analysis Elements

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Revised demand
projections

Performance of
water resource
portfolio

Available treated
wastewater

ROC discharge
alternatives

Ability to Fully Utilize

- Groundwater storage
- Surface water blending
- Partnerships

Economics

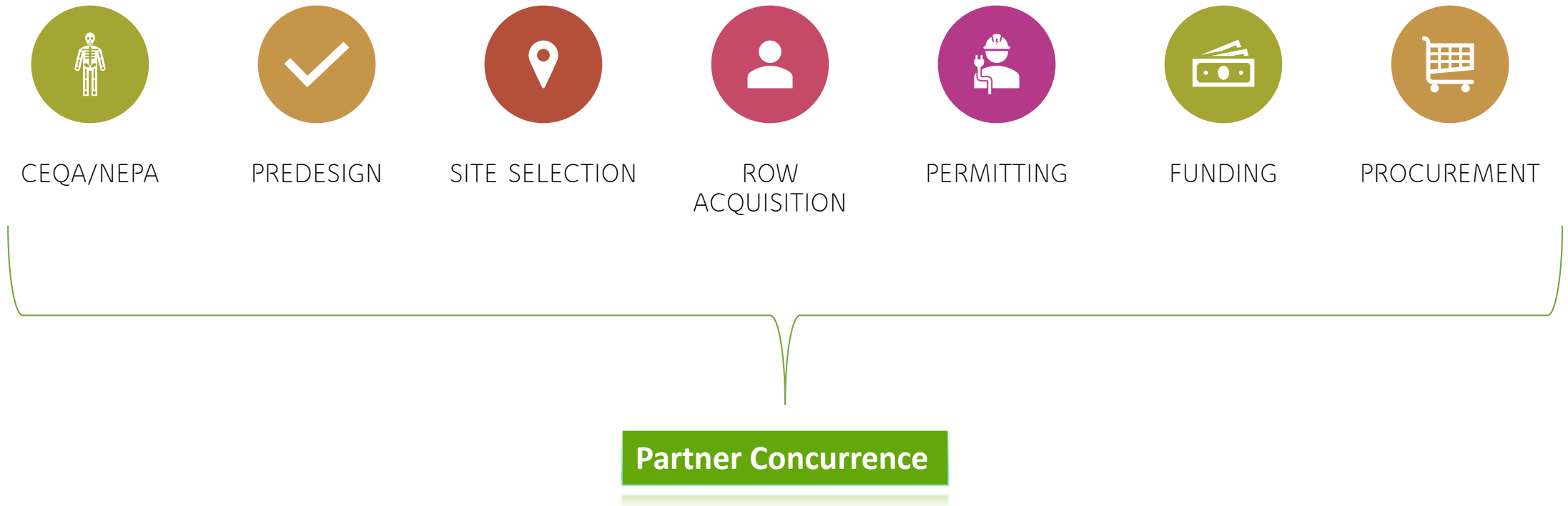
- Unit cost
- Capital
- Averted damages

Indications from Preliminary Demand Assessment

- WSMP 2040 analysis based on demand projections that assumed a return to pre-drought water use patterns
- Water retailers still achieving 20% savings compared to 2013
- Preliminary review indicates a potable reuse project consistent with the Palo Alto/Mountain View treated wastewater agreement in place may be sufficient to meet level-of-service goal
- Complete analysis will be provided as part of Monitoring and Assessment Program in Fall 2020

Alternative Paths Forward – Common Elements

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Alternative Paths – Major Differences

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Path A

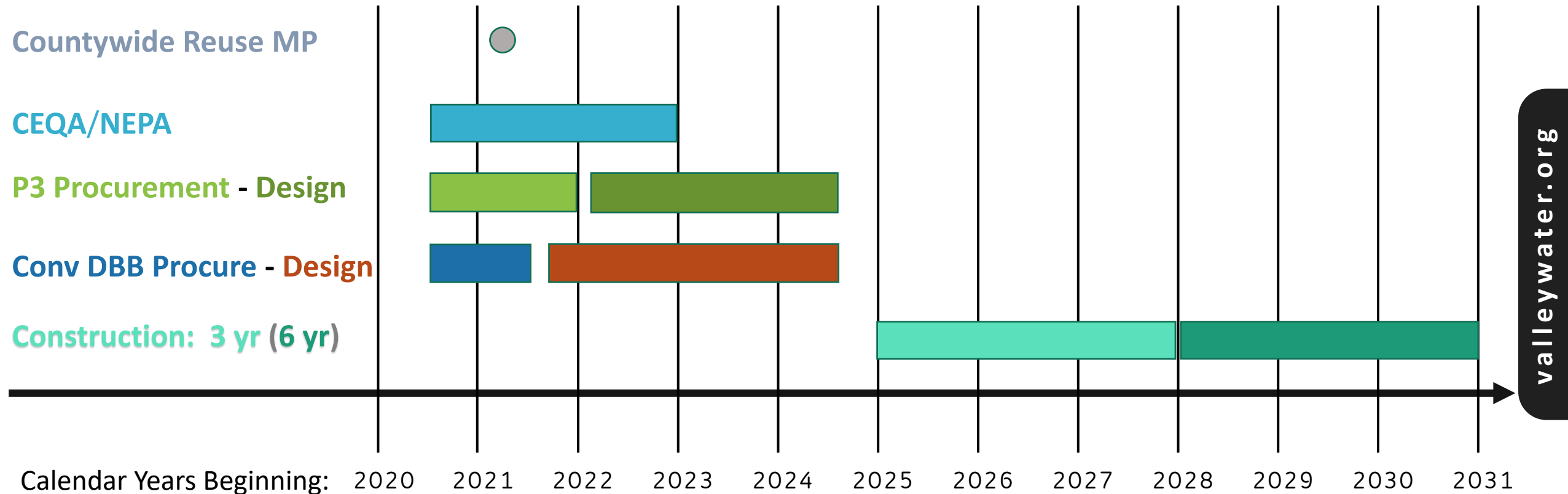
- Indirect Potable Reuse (IPR), not DPR
- Earlier schedule may better position for funding
- Project based on agreements in place

Path B

- Allows consideration of DPR Regs
- Potentially more cost-effective
- Allows program right-sizing and optimization

Path A Schedule: Three Year vs. Six Year Construction

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Immediate Start vs Post-DPR Regulations Start

Path A Immediate Start		Path B Post-DPR Regulations Start	
Pros	Cons	Pros	Cons
Potentially lower capital costs (lower capacity)	Less cost-effective with smaller facility, higher rates	Potentially more cost-effective with scale and optimization, lower rates	Higher capital cost and greater rate impact (if larger project)
Increased chance for grant opportunities	Earlier onset of rate impacts	Delays rate impacts	Could miss grant funding opportunities
Agreement in-place with wastewater provider	Budget constraints on staff hiring	Greater stakeholder consensus	Delays actions for supply reliability
Improves supply reliability sooner	Not integrated with reuse and water treatment plant masterplan analyses	Provides opportunity for DPR	Public acceptance of DPR uncertain and could delay
IPR regulatory approval and public acceptance is high	IPR may not be most optimal	Greater bandwidth for consideration of all issues	

Alternative Paths – Cost & Timing Differences

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Path A

- Construction start FY 2025
- Higher rates (for same sized project)
- Potentially lower capital costs (smaller facility ~ \$500M) though additional future investments may be required
- External funding possible

Path B

- Construction start FY 2027 or later
- Lower rates (for same sized project)
- Potentially higher capital costs (larger facility ~ \$650M) but more efficient due to system optimization
- External funding availability uncertain

Note: Costs are shown in 2019 \$'s for both alternatives.

Water Rate Projection Assumptions

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- Assumes 0% increase to North County (Zone W-2) M&I Groundwater charge for entirety of FY 21
- Based on FY 21 Adopted Budget and CIP
- WIFIA loan funded alternatives assume repayment of 49% of capital costs 5 years after facility is operational
- P3 (private financing) alternatives assume payments begin when facility is operational, less VW 30% share of debt financing
- Alternative results expressed in terms of annual % increase in North County M&I Groundwater charge for FY 22 thru FY 30

Water Rate Projection Estimates

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	Path B
Project Size	11.2 TAF
Capital (\$M)	\$500
Annual O&M (\$M)	\$12.30
Construction Year Start	2027
Operations Year Start	2033

FY 22-FY 30 annual % increase Zone W-2 M&I GW charge

DBB	9.0%
P3	8.6%
DBB + WIFIA	8.3%
P3 + WIFIA	8.3%

DBB = Design/Bid/Build

P3 = Public Private Partnership

WIFIA = Water Infrastructure Finance & Innovation Act (low cost Federal loan)

Purified Water Program currently included in FY 21 CIP

- Sequential construction of plant and pipelines results in FY 33 operations start
- FY 22 to FY 30 annual % increase ranges from 8.3% to 9.0%

Water Rate Projection Estimates

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Current CIP

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	Path B	
Project Size	11.2 TAF	11.2 TAF
Capital (\$M)	\$500	\$500
Annual O&M (\$M)	\$12.30	\$12.30
Construction Year Start	2027	2027
Operations Year Start	2033	2030

- Concurrent construction of plant and pipelines would result in FY 30 operations start...
- But would increase water rate projection

FY 22-FY 30 annual % increase Zone W-2 M&I GW charge

DBB	9.0%	10.0%
P3	8.6%	9.5%
DBB + WIFIA	8.3%	9.2%
P3 + WIFIA	8.3%	9.2%

DBB = Design/Bid/Build

P3 = Public Private Partnership

WIFIA = Water Infrastructure Finance & Innovation Act (low cost Federal loan)

Water Rate Projection Estimates

Current CIP



	Path A		Path B	
Project Size	11.2 TAF	11.2 TAF	11.2 TAF	11.2 TAF
Capital (\$M)	\$500	\$500	\$500	\$500
Annual O&M (\$M)	\$12.30	\$12.30	\$12.30	\$12.30
Construction Year Start	2025	2025	2027	2027
Operations Year Start	2031	2028	2033	2030

FY 22-FY 30 annual % increase Zone W-2 M&I GW charge

	9.6%	10.2%	9.0%	10.0%
DBB	9.6%	10.2%	9.0%	10.0%
P3	9.0%	9.9%	8.6%	9.5%
DBB + WIFIA	8.8%	9.4%	8.3%	9.2%
P3 + WIFIA	8.7%	9.5%	8.3%	9.2%

DBB = Design/Bid/Build

P3 = Public Private Partnership

WIFIA = Water Infrastructure Finance & Innovation Act (low cost Federal loan)

- Path A (construction year start FY 25) would result in FY 28 or FY 31 operations start...

- But would increase water rate projection versus Path B

Water Rate Projection Estimates

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Current CIP



	Path B			
Project Size	11.2 TAF	11.2 TAF	20.2 TAF	20.2 TAF
Capital (\$M)	\$500	\$500	\$650	\$650
Annual O&M (\$M)	\$12.30	\$12.30	\$20.20	\$20.20
Construction Year Start	2027	2027	2027	2030
Operations Year Start	2033	2030	2030	2033

- Path B (larger \$650M facility) would result in FY 30 or FY 33 operations start w/ concurrent construction

FY 22-FY 30 annual % increase Zone W-2 M&I GW charge

	9.0%	10.0%	10.5%	9.2%
DBB	9.0%	10.0%	10.5%	9.2%
P3	8.6%	9.5%	10.0%	8.8%
DBB + WIFIA	8.3%	9.2%	9.6%	8.5%
P3 + WIFIA	8.3%	9.2%	9.6%	8.4%

- FY 22 to FY 30 annual % increase ranges from 8.4% to 10.5%

DBB = Design/Bid/Build

P3 = Public Private Partnership

WIFIA = Water Infrastructure Finance & Innovation Act (low cost Federal loan)

Water Rate Projection Estimates - SUMMARY

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	Path A		Path B			
Project Size	11.2 TAF	11.2 TAF	11.2 TAF	11.2 TAF	20.2 TAF	20.2 TAF
Capital (\$M)	\$500	\$500	\$500	\$500	\$650	\$650
Annual O&M (\$M)	\$12.30	\$12.30	\$12.30	\$12.30	\$20.20	\$20.20
Construction Year Start	2025	2025	2027	2027	2027	2030
Operations Year Start	2031	2028	2033	2030	2030	2033

Current CIP



FY 22-FY 30 annual % increase Zone W-2 M&I GW charge

DBB	9.6%	10.2%	9.0%	10.0%	10.5%	9.2%
P3	9.0%	9.9%	8.6%	9.5%	10.0%	8.8%
DBB + WIFIA	8.8%	9.4%	8.3%	9.2%	9.6%	8.5%
P3 + WIFIA	8.7%	9.5%	8.3%	9.2%	9.6%	8.4%

DBB = Design/Bid/Build

P3 = Public Private Partnership

WIFIA = Water Infrastructure Finance & Innovation Act (low cost Federal loan)

No financial advantage
for P3 over DBB if
WIFIA loan is assumed



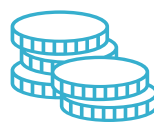
Funding Alternatives



Low-interest loans

Water Infrastructure Finance and Innovation Act (WIFIA)
Clean Water State Revolving Fund (CWSRF) Loan Program
Infrastructure SRF (ISRF) Loan Program

Note: P3 would not be eligible for an SRF loan



Grants

Title XVI of the Reclamation Projects Authorization and Adjustment Act
Water Recycling Funding Program (WRFP) Construction Grants
Integrated Regional Water Management (IRWM) Grants



Potential Stimulus

American Recovery and Reinvestment Act (ARRA) of 2009 precedent



Why potable reuse may rate highly

WIFIA application favors projects that generate economic benefits and address water resource challenges
Specific mentions of aquifer recharge and water reuse

Steps for P3 (1 of 2)

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

1. Implement staffing plan
2. Finalize agreements with partner public agencies
3. Outline general project requirements and off-ramps, depending on whether it will be a fixed-price (industry standard) or a progressive DBFOM
4. Engage with P3 entities and prepare/re-issue RFQ
5. Establish project financing (private vs. public) and determine whether WIFIA will be part of the overall financing strategy

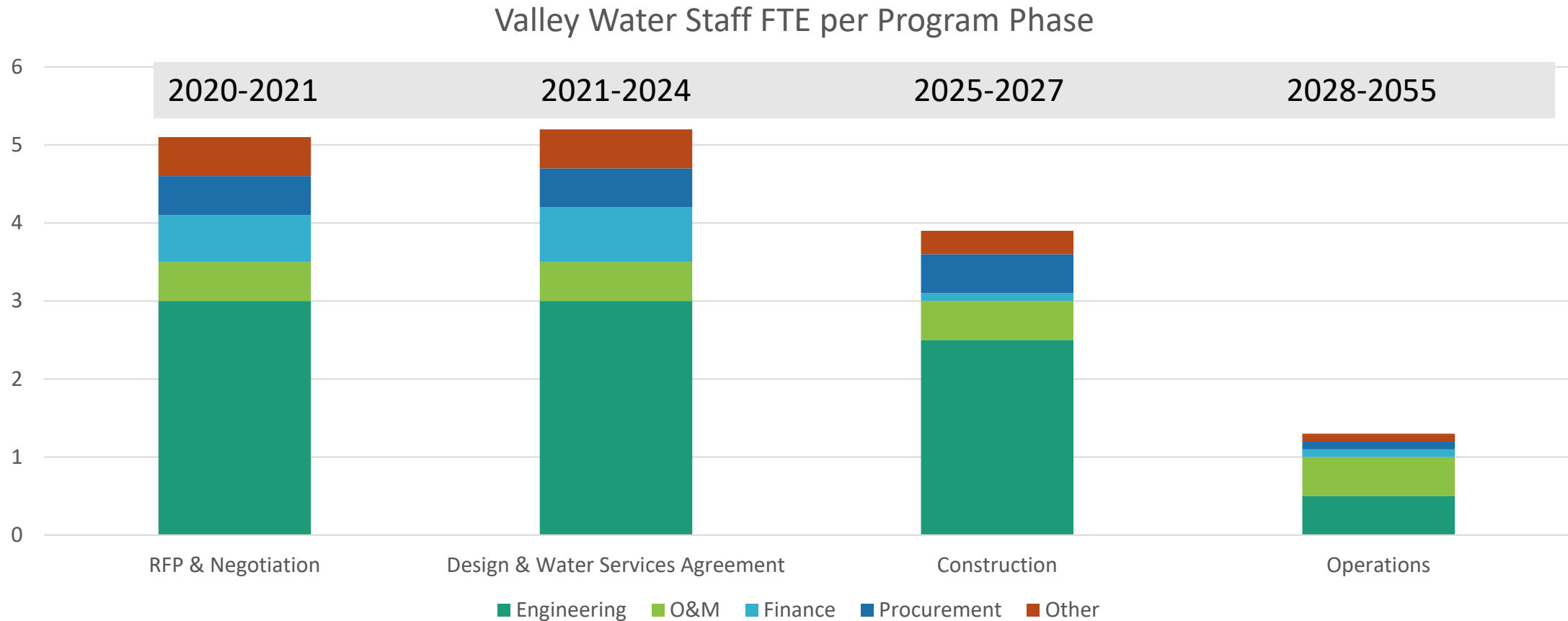
Steps for P3 (2 of 2)

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

6. Establish risk allocation
7. Prepare and publish RFP
8. Select based on experience, proposed concepts, prorates and price (if fixed-price DBFOM)
9. If progressive DBFOM, then 2-year development period for preparing guaranteed maximum price and the Water Services Agreement. If fixed-price DBFOM, then more detailed RFP and longer response period with Water Services Agreement part of respondent proposal

Staffing Plan for Path A P3 Implementation

Requires three new FTE's (plus external resources)



Next Steps

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