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Sites Reservoir Committee Workshop

Project Update:

2.1 Water Storage Investment Program

ACWA Conference, May 8, 2018

BENEFITS PROVIDED BY SITES

The Sites Reservoir
Delivers water to
California's water
system for...



Drinking Water



Irrigation



Climate Change Resiliency



Enhanced Water Quality



New Recreational
Opportunities



Flood Management



Ecosystem Improvements



Renewable Energy

Stabilize Sacramento River
fall flows for salmon



Conserve coldwater pools
in existing reservoirs later
into the summer months to
improve conditions for salmon
spawning and rearing



Provide nutrient rich water
to the Yolo Bypass to
benefit smelt



Increase water supplies for refuges
and managed wetlands north and
south of the Delta



Net improvements in ecosystem and water quality conditions in the Sacramento River system
and Sacramento-San Joaquin Delta

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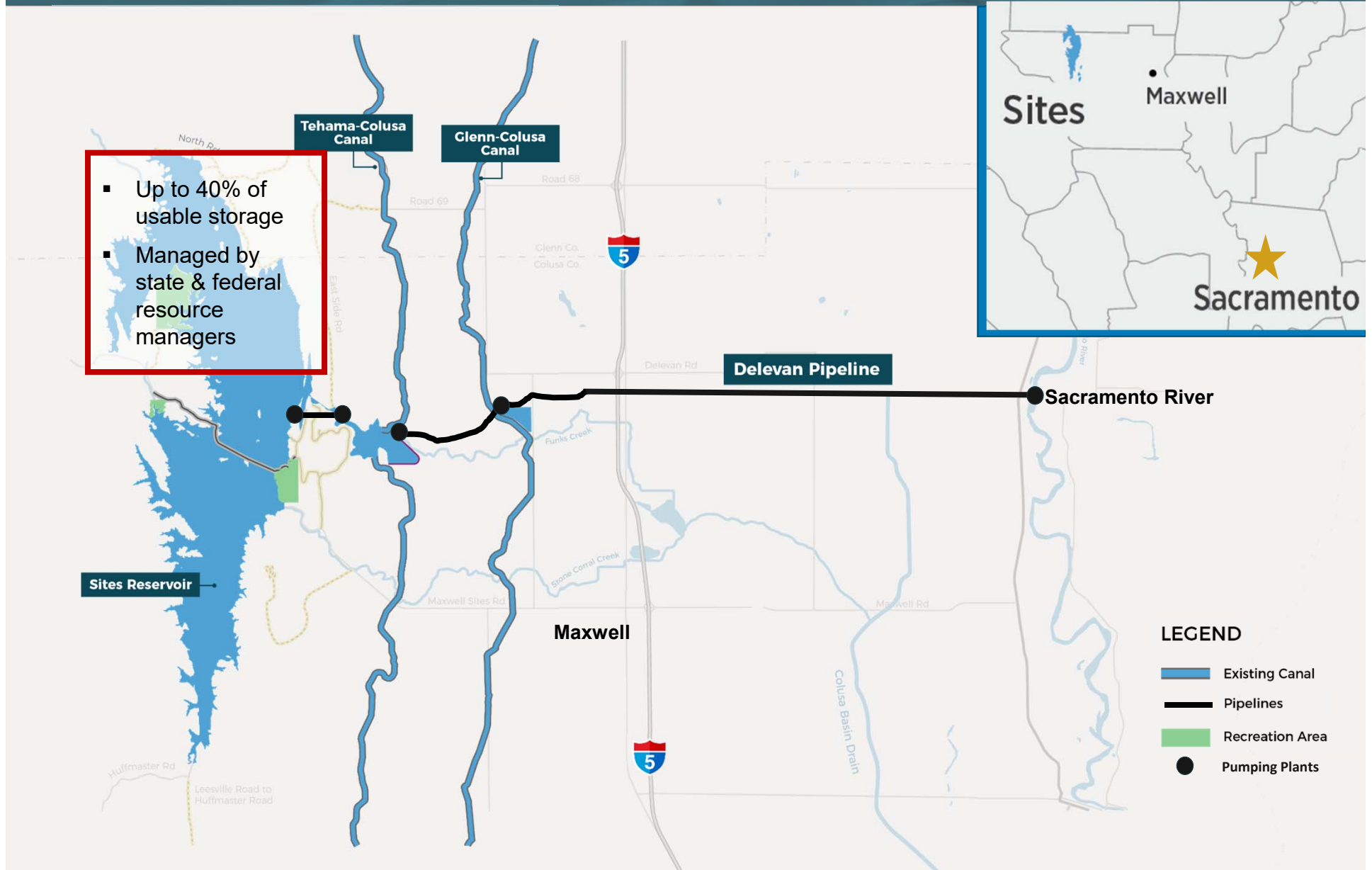


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Water for the Environment



Water Commission: May 3rd Synopsys

Legend:

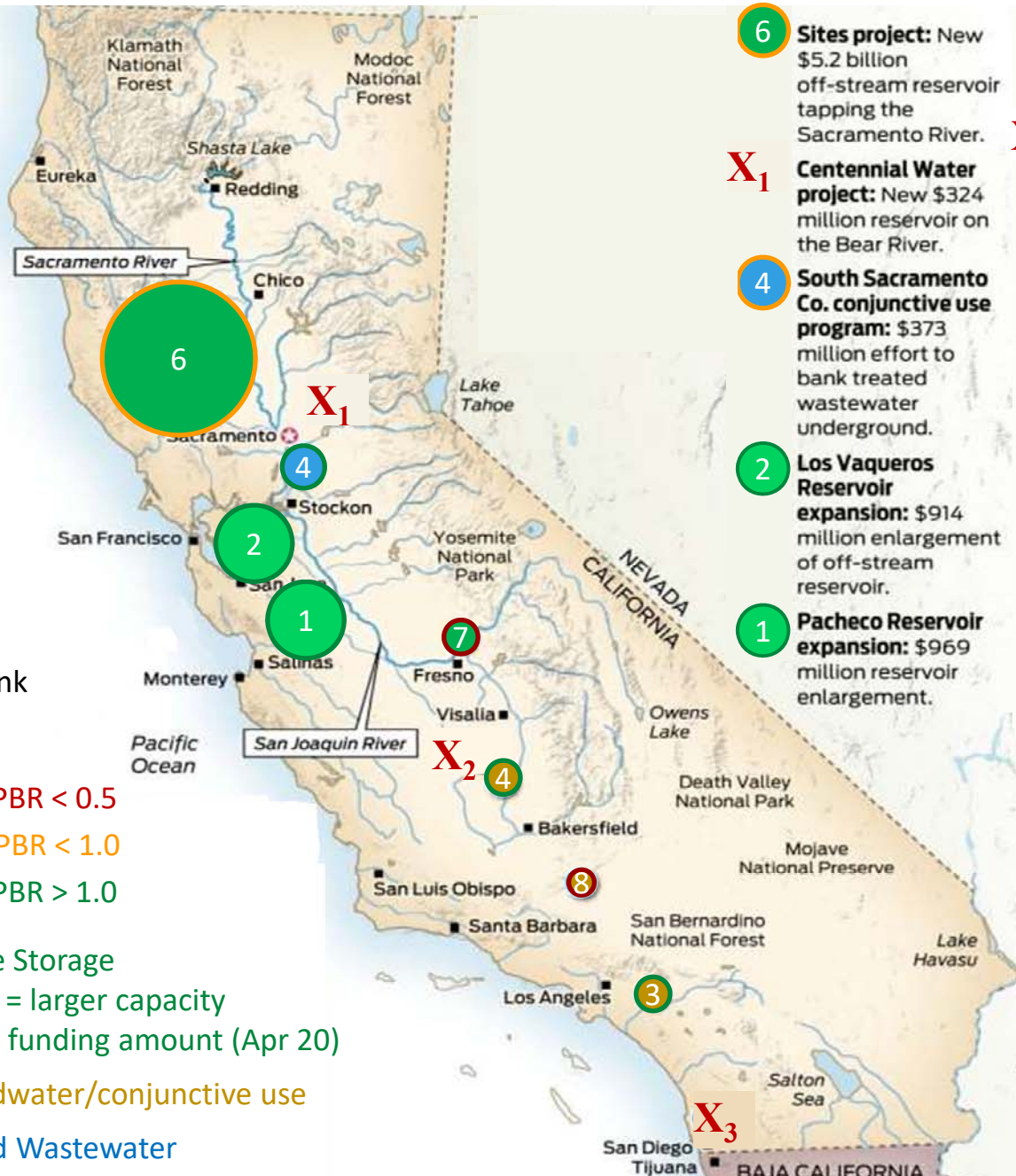
6 May 3rd PBR rank

- 6 Red: PBR < 0.5
- Orange: 0.5 < PBR < 1.0
- Green: PBR > 1.0

6 Green: Surface Storage
 Darker shade = larger capacity
 Size = eligible funding amount (Apr 20)

Brown: Groundwater/conjunctive use

Blue: Treated Wastewater



6 Sites project: New \$5.2 billion off-stream reservoir tapping the Sacramento River.

X₁ Centennial Water project: New \$324 million reservoir on the Bear River.

4 South Sacramento Co. conjunctive use program: \$373 million effort to bank treated wastewater underground.

2 Los Vaqueros Reservoir expansion: \$914 million enlargement of off-stream reservoir.

1 Pacheco Reservoir expansion: \$969 million reservoir enlargement.

7 Temperance Flat: New \$2.7 billion reservoir on the San Joaquin River.

X₂ Tulare Lake storage: \$603 million effort to store Kings River water underground.

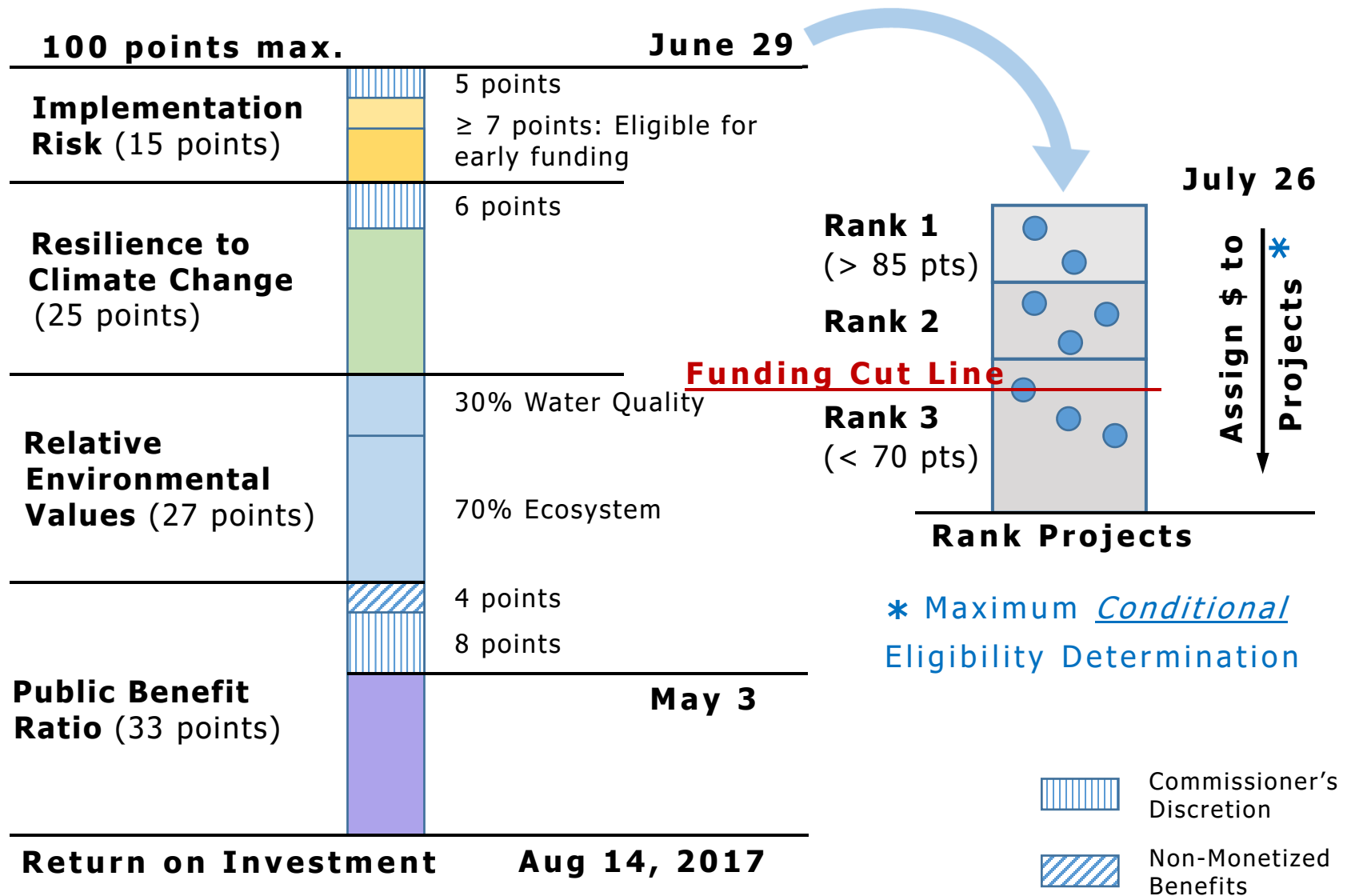
4 Kern Fan: \$171 million groundwater bank.

8 Willow Springs water bank: \$343 million expansion of groundwater bank.

3 Chino Basin conjunctive use program: \$480 million effort to bank treated wastewater underground.

X₃ San Diego water recycling: \$1.2 million plan to treat and store wastewater.

WSIP Scoring Rubric:



WSIP Evaluation of Sites' Benefits

Process and Timeline:

<u>Date</u>	<u>Component</u>	<u>Criteria</u>	<u>Score</u>
Nov 15	Eligibility & Completeness	Pass	Pass
	1. Public Benefit Ratio (PBR):		
Aug 14	Submitted		2.11 \$ 1,661.7 M
Feb 1	Commission's Staff (63.5% ecosystem)		0.40 \$ 662.0 M
Feb 23	Appeal		1.90 \$ 1,338.0 M
May 03	Water Commissioners Decision		0.73 \$ 1,008.3 M
Jun 29	Non-monetized Benefits		___ + 4
	Commission "Finalize" Points	33 max	___ +/- 25% (8 pts)*
	2. Relative Environmental Values:	27	___ No adjustment
	3. Resilience to Climate Change:	25	___ +/- 25% (6 pts)*
	4. Implementation Risk:	15	___ +/- 25% (5 pts)*
June 29	Return on Investment:	100 max	To rank projects
Jul 26	"Max Conditional Eligibility Determination"		\$ ___ Amount by rank
	Early Funding (Implementation Risk \geq 7)		\$ ___ \$ 49.6 M (requested)

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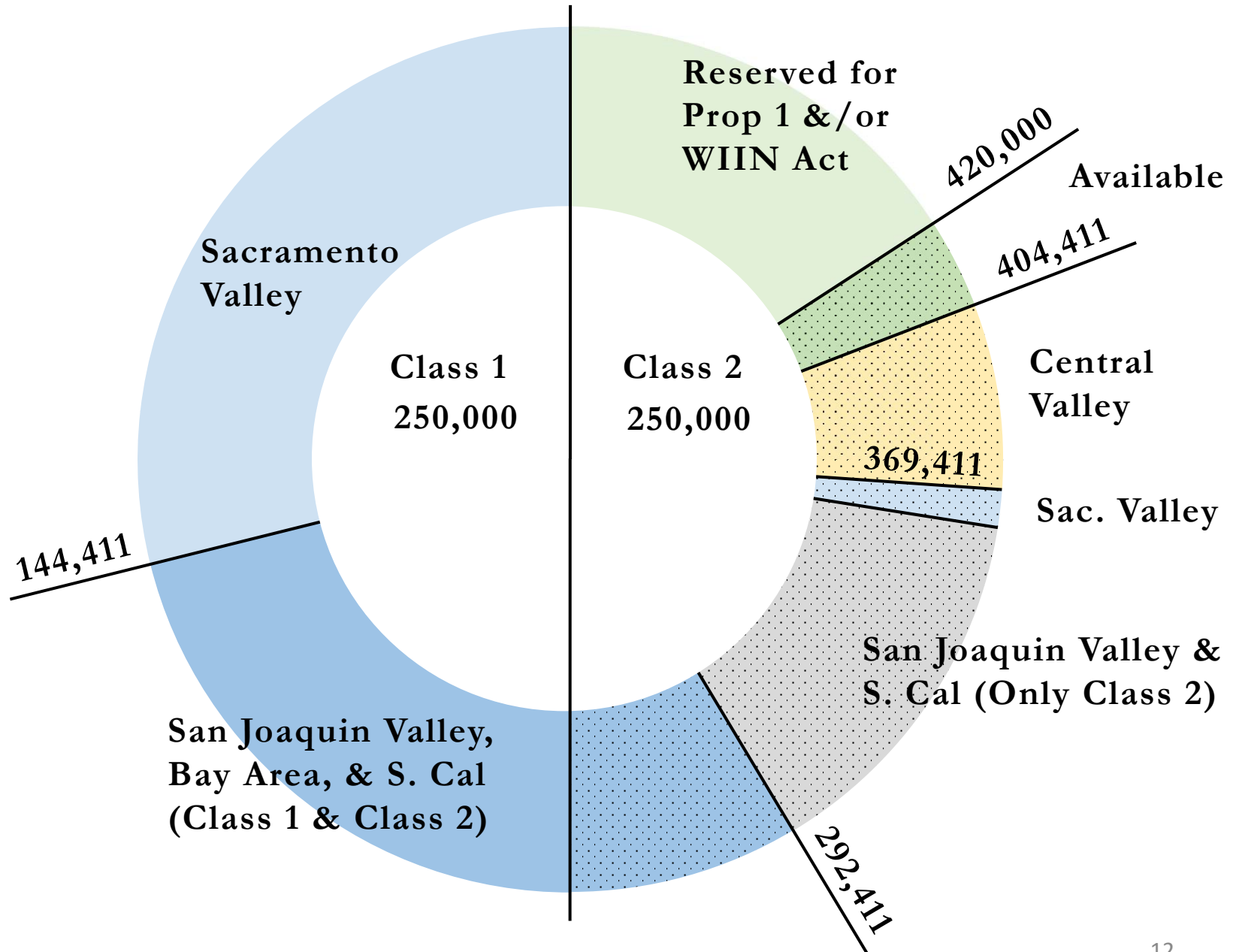
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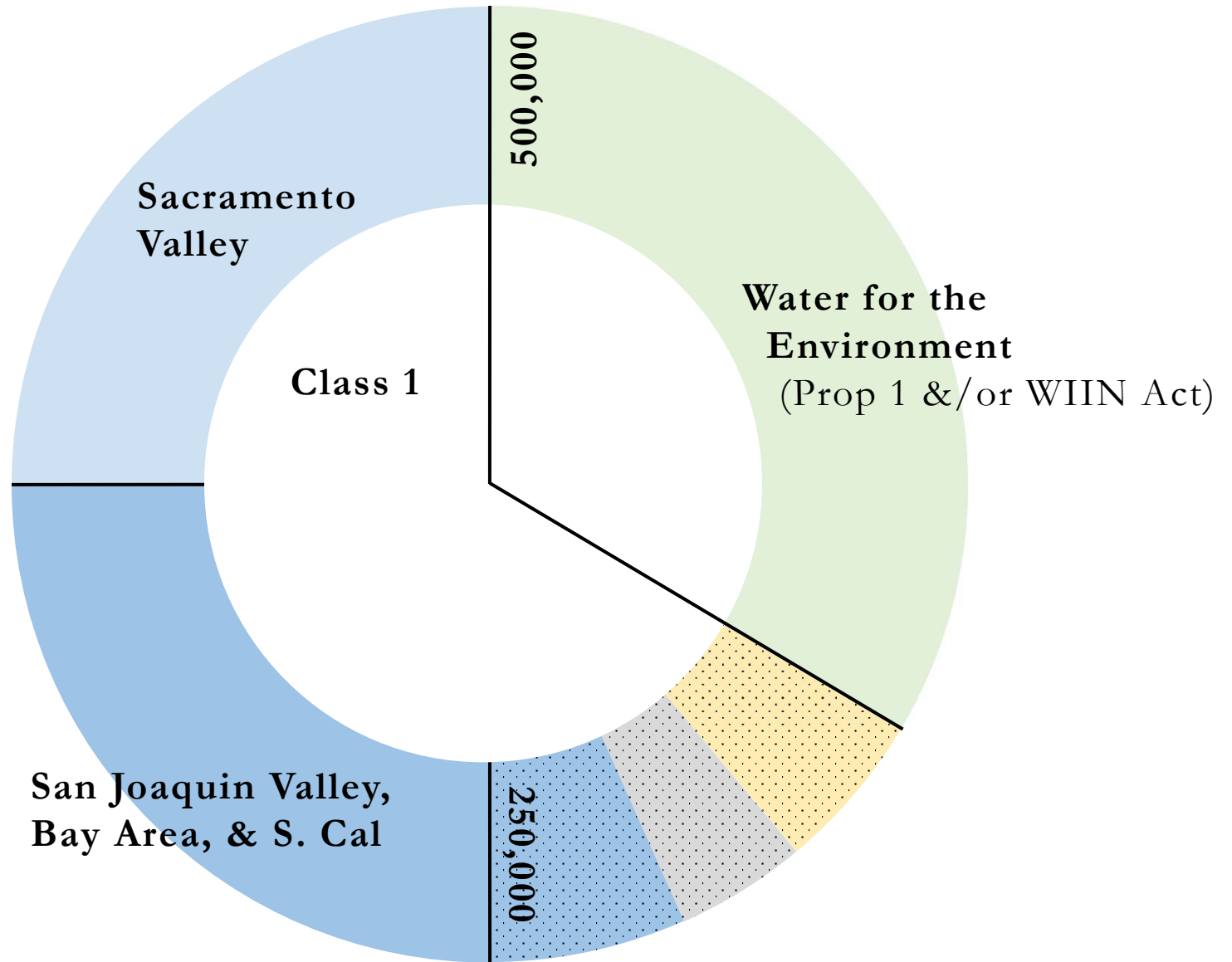
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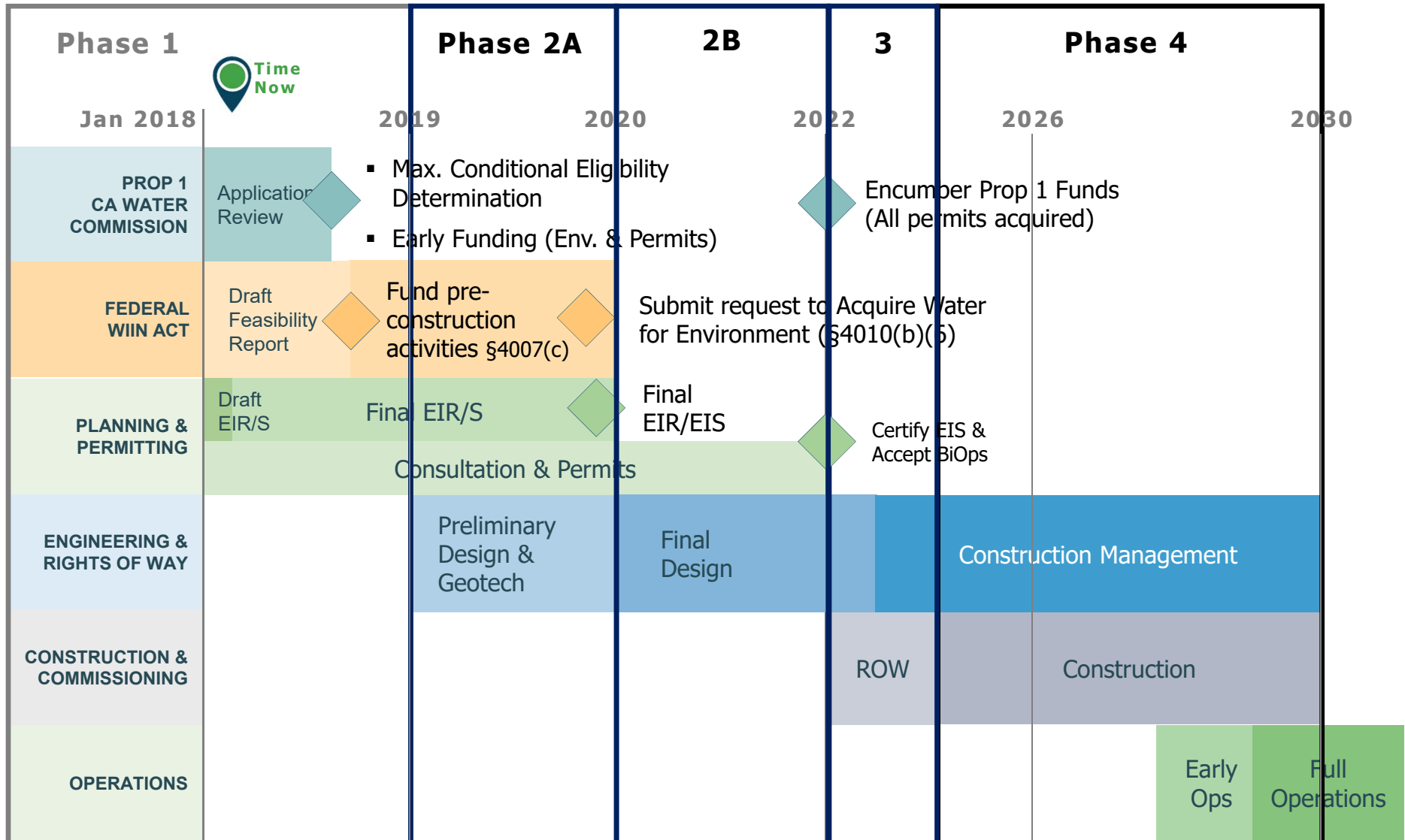
Participation (Diversions into Storage)



Participation, Post-Water Commission (EXAMPLE)



Next Steps:



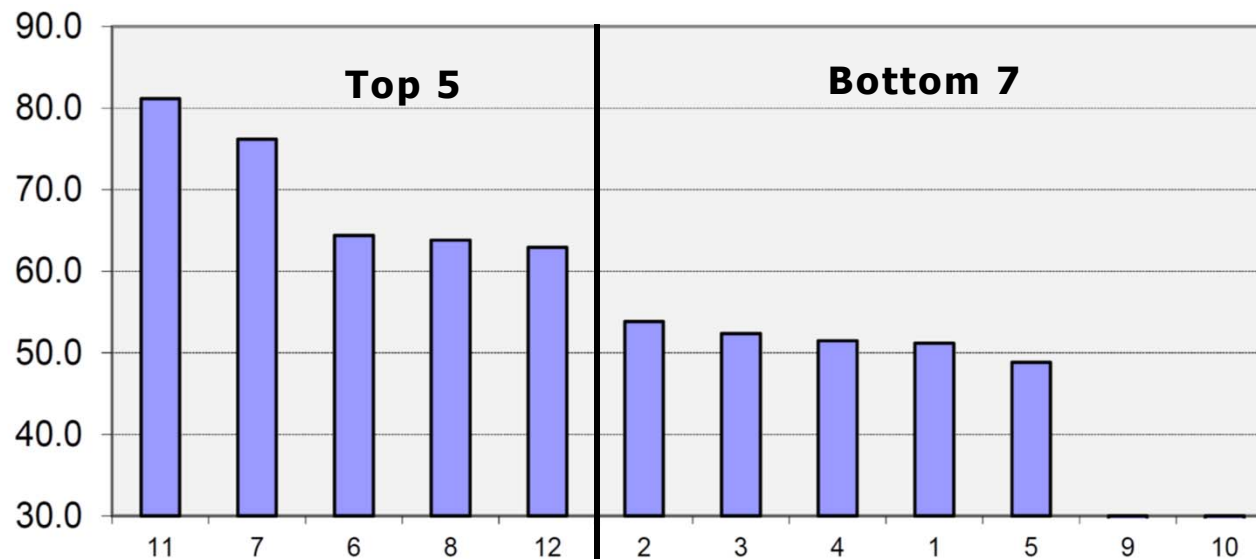
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Sites Reservoir Committee Workshop

**Project Update:
2.2 Procurements**

ACWA Conference, May 8, 2018

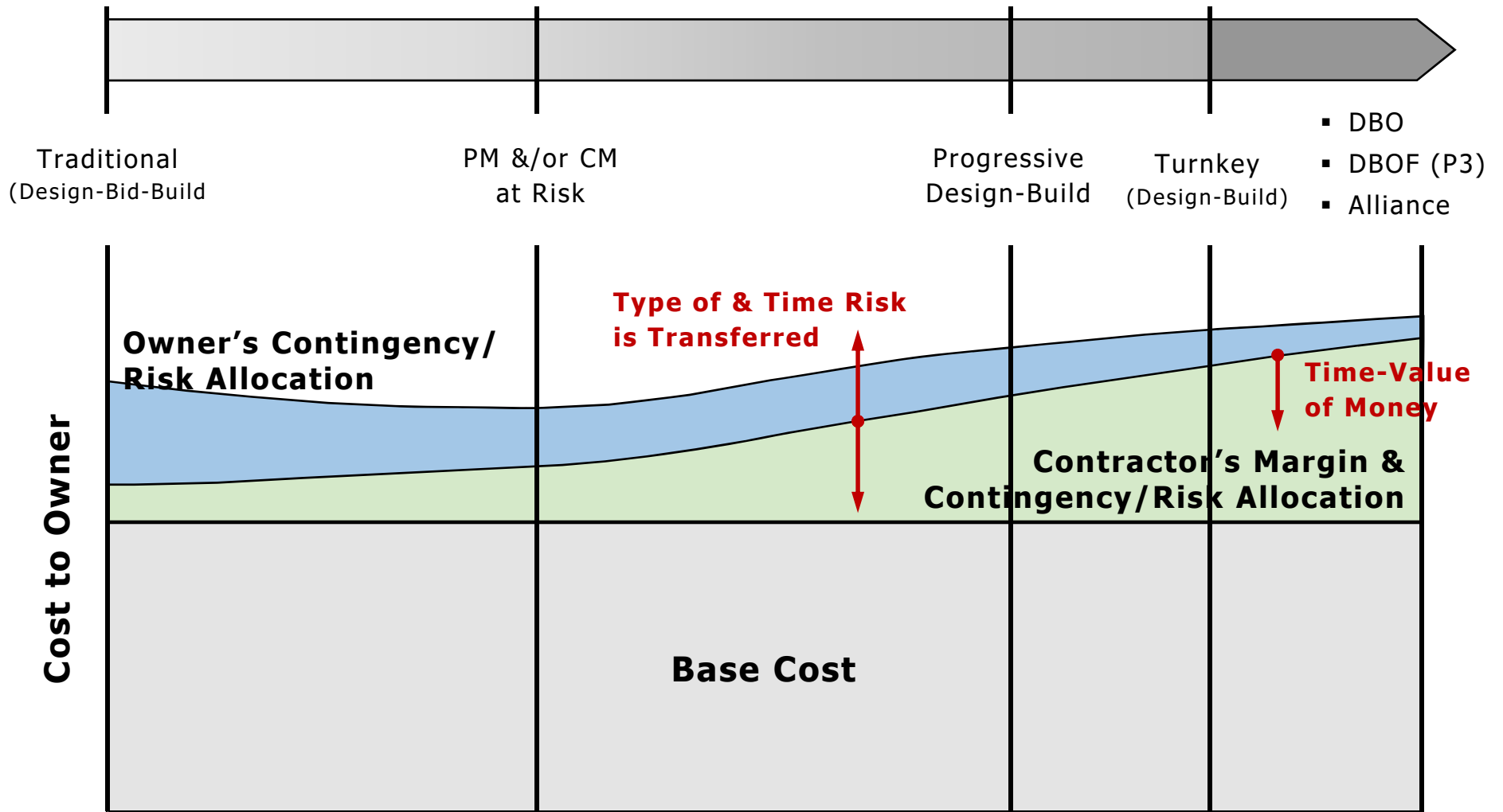
Construction Industry Institute PDCS



<u>Method</u>	<u>Pct</u>	<u>Method</u>
11	84.1	Turnkey
7	78.5	Design-Build or EPC
8	66.2	Multiple Design-Build or EPC
6	64.7	Construction Management @ Risk
12	62.6	Fast Track

<u>Method</u>	<u>Pct</u>	<u>Method</u>
2	52.1	Traditional (DBB) with Early Procurement
3	49.7	Traditional (DBB) with Project Manager
4	48.8	Traditional (DBB) with Construction Manager
1	48.2	Traditional Design-Bid-Build (DBB)
5	47.4	Traditional (DBB) with Early Procurement and Construction Management
9	14.4	Parallel Primes
10	11.2	Traditional (DBB) with Staged Development

Procurement - Considerations



Typical Owner-Managed Risks

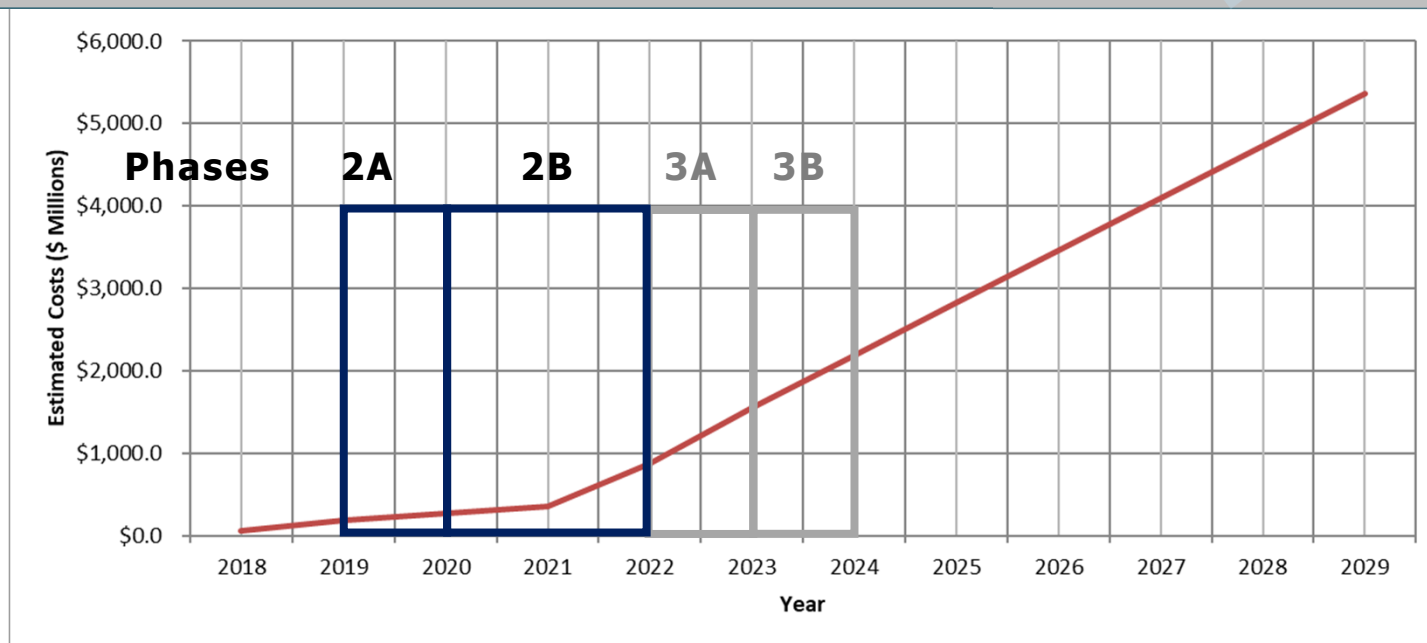
- Ground conditions
- Permit acquisition & requirements
- Real Estate acquisition
- Force Majeure

Typical Constructor-Managed Risks

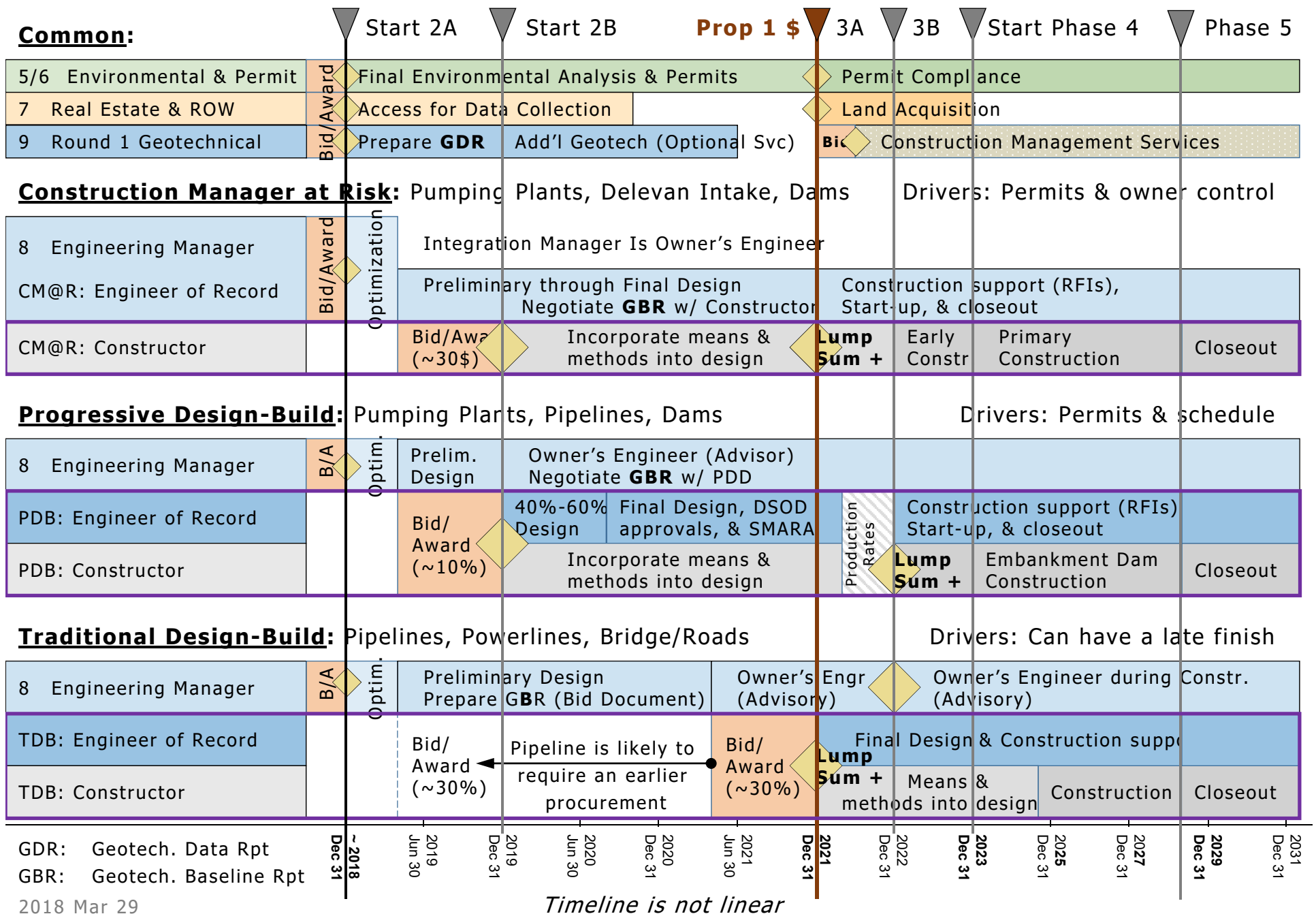
- Integration
- Performance
- Market prices & conditions
- Inclement weather

Phased Implementation Strategy

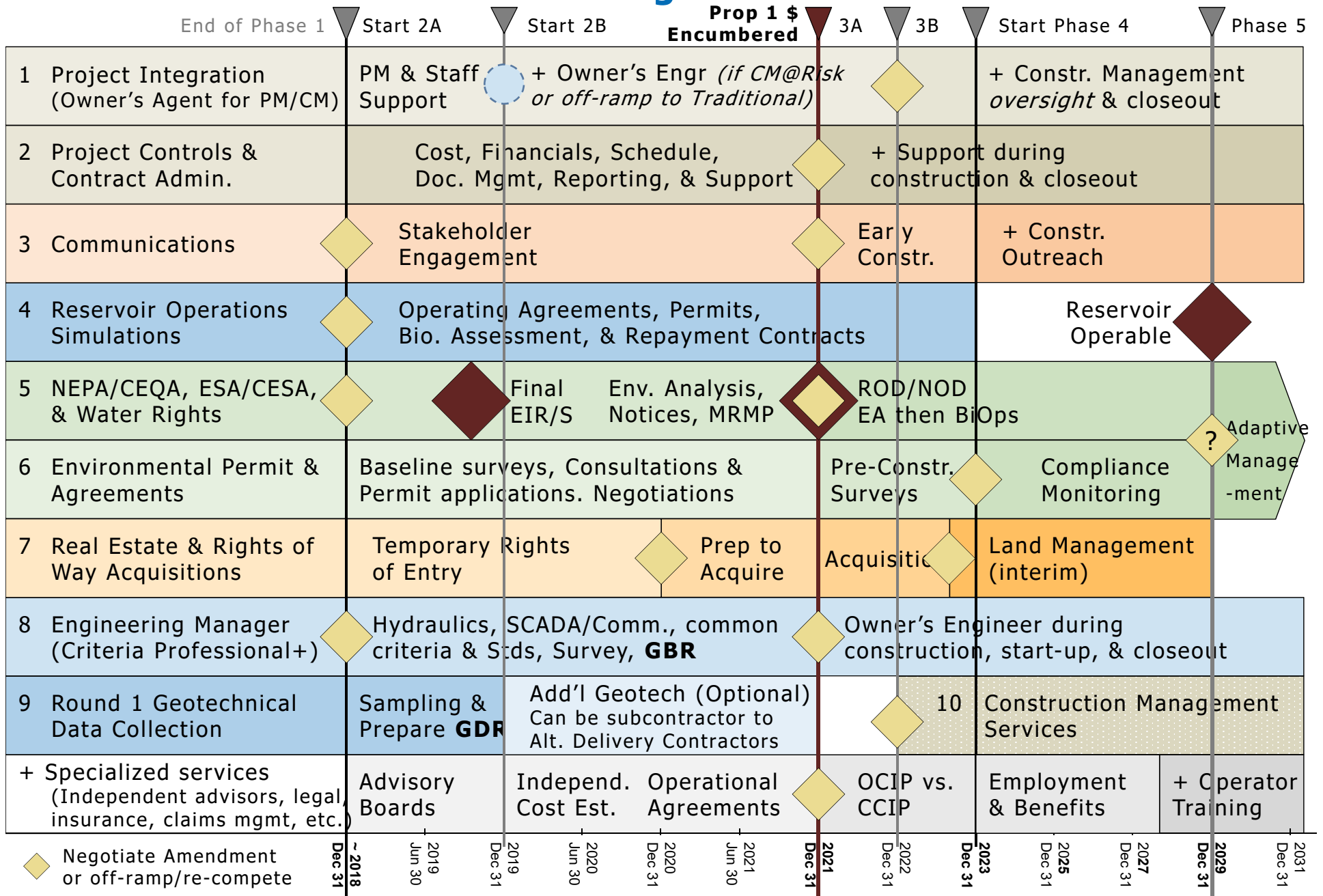
Phase	Start	Finish	Estimate (\$million)
Phase 2A	Jan 2019	December 2019	\$177
Phase 2B	January 2020	December 2021	\$149
Phase 3A	January 2022	December 2022	\$229
Phase 3B	January 2023	December 2023	\$691
Phase 4	January 2024	January 2030	\$3,812
TOTALS (includes an estimate of finance)			\$5,358



Procurements: Delivery Method Comparison



Phase 2 Procurement Packages



Project Integration	PM & Staff Support	Program Mgmt	+ Owner's Engineer (If off-ramp & EDM performs design)		+ Constr. Mgmt Oversight & closeout									
Project Controls & Contract Admin.	Cost/Financials, Schedule, Doc. Mgmt, & Reporting, Support			+ Support during construction & closeout										
Communications	Stakeholder Engagement			+ Early Constr.		+ Constr. Outreach								
Reservoir Operations Simulations	Operating Agreements, Permits, Bio. Assessment, & Repayment Contracts													
NEPA/CEQA, ESA/CESA, & Water Rights	Final EIR/S		ROD & BiOp /NOD		& Water Right									
Environmental Permit Acquisitions	Consultations & Permit applications		Pre-Constr. Surveys		Compliance Monitoring									
Real Estate & Rights of Way Acquisitions	Temporary Rights of Entry		Prep to Acquire		Acquisitions	Land Management (By Authority)								
Engineering Design Manager	Hydraulics, SCADA/Comm., GBR, Criteria & Stds, Survey Controls		+ Owner's Engineer (If PDE or TDB)		Owner's Engineer during construction & closeout									
Round 1 Geotechnical Data Collection	Sampling & GDR		Prepare GDR & Input to seismic		Bids Construction Management Services									
Import Borrow Areas	Technical Studies		Add'l Geotech & SMARA permits		Quarry processing & stockpile operations									
Local Borrow (Dams) & Spoil (Pipe) Areas	Prelim. Design		Final Design, DSOD approvals		Embankment Dam Construction									
Sites (Embankment) Dam			Bid/Award (CM@Risk or Progressive Design-Build)		Lump Sum +		Monitor filling & grouting program (if needed)							
Golden Gate (Embankment) Dam														
9 Saddle Dams & Spillway														
Demo/Clear (in-Res.) & Maintain Roads	30% Design		Bid		Final Design & Spec.		Demo.		Common Use Roads					
Sites Res. Inlet/Outlet Works	30% Design		Bid/Award		Final Design		Lead-time Equip		Lump Sum Constr.		Demobe			
Sites Pump/Gen. Station & Valves	30% Design		Hydropower Decision						Constr.		Punch-list			
F/D Sites Pump/Gen. & Ancillary Equip	Specs		Bid		Design, CFD Modeling, perf. test		Fabricate, Test, & Deliver		Commission		Punch-list			
Holtouse Reservoir	30% Design		Bid/Award		Final Design		Procure long lead-time Equip		Lump Sum Constr.					
TRR Pump/Gen. Station & Valves	30% Design		Bid		Design, CFD Modeling, perf. test		Fabricate, Test, & Deliver		Commission					
F/D TRR Pump/Gen. & Ancillary Equip	Specs		Bid		Design, CFD Modeling, perf. test		Fabricate, Test, & Deliver		Commission					
Terminal Regulating Reservoir (lined)	30% Design		(Progressive Design-Build)						Construction		Demobe			
Pipeline, TRR to Sites (4 x 12 ft dia)	30% Design										Demobe			
F/D Pipe Segments (E. TRR to Holtouse)	30% Design		Bid/Award		Final Design w/ dewatering, pipe jacking & spoil areas		Design		Fabricate & Deliver					
Pipeline, Delevan to TRR (2 x 12 ft dia)	30% Design		Bid/Award		(Design-Build)		Design		Fabricate & Deliver					
F/D Pipe Segments (Delevan to E. TRR)	30% Design		Bid/Award		(Design-Build)		Design		Fabricate & Deliver					
Delevan Intake/Outlet & P/G Sta.	Opt. Study		65% Design		CVFPB, DFW, NMFS		Bid/Award		Final Design		Lump Sum Construction		Demobe	
F/D Delevan Pump/Gen. & Anc. Equip	Specs		Bid		Design, CFD Modeling, perf. test		Fabricate, Test, & Deliver		Commission		Punch-list			
Permanent Roads & Bridge (Design-Build)	Study		30% Design		Bid/Award		Final & Permits		Relocations		Permanent			
Powerlines & Substations (Design-Build)	SI & Facility Studies		Utility Agreements		Design & Spec		Bid/Award		Design & Procure		Constr. & if needed T-Line Relocations			
Construction power to takeoff points									Construct Temporary					
Project Commissioning & Operator Training (CM@Risk)					Design/Spec.		Bid		Integrated Start-up Plan		Support		Start-up	
F/D Red Bluff Pump/Gen. (Design-Build)	Design		Bid		CFD Model		Fabricate & Deliver		Install		Start-up		(Reservoir Filling)	
Recreation & Mitigation Sites (Design-Build)	Concepts w/ Public Input		Design/Spec.		Bid/Award		Final Designs		Mitigation		Recreation			

Business Drivers/Best Practices

- Staffing & appropriate span of control
- Provides checks and balances
- Early price certainty (affordability)
- Achieve best value
 - ✓ Competitive selection (2-step selection: Qualifications to short-list, followed by a detailed procurement process & requirements)
 - ✓ Partnering
 - ✓ Equitable risk allocation
- Flexibility to adjust
 - ✓ Adjust to schedule delays – external & internal
 - ✓ Ability to off-ramp
 - ✓ Sufficient bench strength (& succession planning)
- Diverse participation (includes small, local, DVBE, etc.)



General Contract Concepts

- Evaluate new contracts for all required service
- Existing providers may be selected to continue to provide that service
- Respondents can compete for multiple scopes
- Contracts may be stopped at Phase 2b or be extended into Phase 3+
- Contracts may be modified to serve as Authority's representative for Phase 3 or 4
- Contracts are "umbrellas". Work and budget managed by task order
- Awards are based on qualifications of the firm and their team
 - ✓ Allows use of alternative delivery methods (start of Phase 2B)
 - ✓ Provides flexible task order service contracts
 - ✓ Addresses administrative needs
- Formal (facilitated) partnering process



What is the Project buying for Phase 2?

1. Project Integration
 2. Project Controls
 3. Communications
 4. Reservoir Operations Planning
 5. Environmental Analysis - EIR/S
 6. Permitting & Agreements
 7. Real Estate
 8. Engineering Design
 9. Geotechnical Engineering
- + specialized contracts (e.g. legal, independent review boards)



1. Project Management Integration

- Reports to the Project Operations Manager
- Provides:
 - ✓ Integration of the Project's components and other needs
 - ✓ Quality Management,
 - ✓ Risk Management,
 - ✓ Seismic performance
 - ✓ Geographic Information System
 - ✓ Health & Safety,
 - ✓ Staff support to Owner's Representatives



2. Project Controls & Contract Administration

- Reports to the Project Operations Manager
- Provides:
 - ✓ Scheduling,
 - ✓ Budget & Cost Tracking,
 - ✓ Contract administration & compliance support, (including claims management support)
 - ✓ Reporting & documentation
 - ✓ Document Management & Control,
 - ✓ Administrative Support



3. Communications and Facilitation

- Reports to the Real Estate & Outreach Manager
- Provides:
 - ✓ Landowner coordination support
 - ✓ Stakeholder & *local* agency coordination
 - ✓ Government affairs & legislative support
 - ✓ Public outreach & community relations
 - ✓ Media affairs & strategic communications
 - ✓ Project website and social media platforms



4 Reservoir Operations Simulations

- Reports to the Environmental Planning & Permitting Manager
- Provides:
 - ✓ Model simulations, in river & in-reservoir
 1. Final EIR/S
 2. Permits applications, and acquisition
 3. Agreements
 4. Financing & repayment
 - ✓ Coordinate with preliminary engineering designs development



5. Environmental Analysis – EIR/S

- Reports to the Environmental Planning & Permitting Manager
- Provides:
 - ✓ Responses to comments on the Draft EIR/S
 - ✓ Prepares Final EIR/S
 - ✓ Coordinates with other CA and federal agencies
 - ✓ Prepares draft notices, MRMP, and findings



6. Permitting and Agreements

- Reports to the Environmental Planning & Permitting Manager
- Provides:
 - ✓ Prepare permitting plans and permit applications
 - ✓ Collect environmental field data (e.g.; wetland surveys)
 - ✓ Coordinate with permitting agencies
 - ✓ Prepare draft agreements.
 - ✓ Support permit acquisition



7. Real Estate

- Reports to the Real Estate & Outreach Manager
- Provides:
 - ✓ Obtains temporary access agreements
 - ✓ Support permanent real estate acquisition actions
 - ✓ Interim land management
(post acquisition through Construction)



8. Preliminary Engineering Design

- Reports to the Engineering, Procurement & Construction Manager

Packaging & delivery methods may dictate number of awards

- Provides:

- ✓ Optimization & preliminary plans & specifications
 - All facilities
 - Recreation
 - Grid interconnection
 - Hydropower
- ✓ Common platforms (Hydraulics, topographic survey & controls)
- ✓ Incorporates refined geotechnical
- ✓ Cost and construction schedule estimates
- ✓ Support to environmental planning and permitting efforts
- ✓ Provides requirements to real estate



9. Geotechnical Engineering

- Reports to the Engineering, Procurement & Construction Manager
- Provides:
 - ✓ Investigates geotechnical conditions at key facilities location
 - ✓ Geotechnical Data Report



10. Construction Management Services

- Reports to the Engineering, Procurement & Construction Manager
- Potential for multiple contracts
 - Award contracts to align with construction packaging
- Provides:
 - ✓ Field inspection, testing, and reporting
 - Level of effort is commensurate with contract method.
 - Ranges from Quality Assurance to include Quality Control
 - ✓ Support to start-up and commissioning