Sites Project

Reservoir Committee Workshop

Nov 28, 2017

AGENDA - NEXT STEPS

- Participation
- Proposition 1
- Draft EIR/EIS
- Phase 2

Participation

✓ Developed Estimated Deliveries from Modeling

Key Assumptions:

- Hydrology
- Facilities
- Regulations

Annual Diversion to Storage: Approx. **500,000** AFY

✓ Reserved Half for Prop 1 and WIIN Act

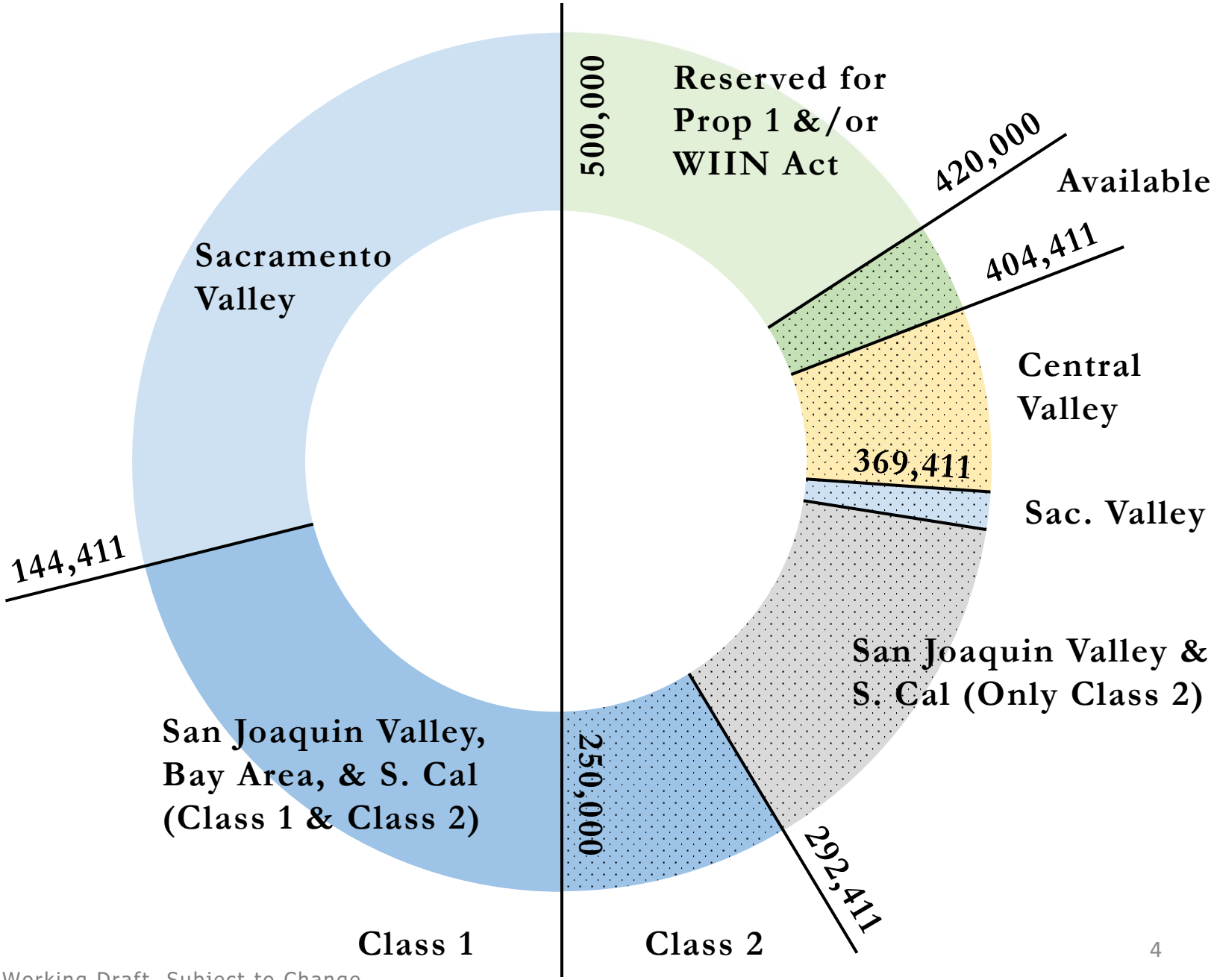
✓ Water User Participation

Class 1 for non-Reserved (250,000 AFY)

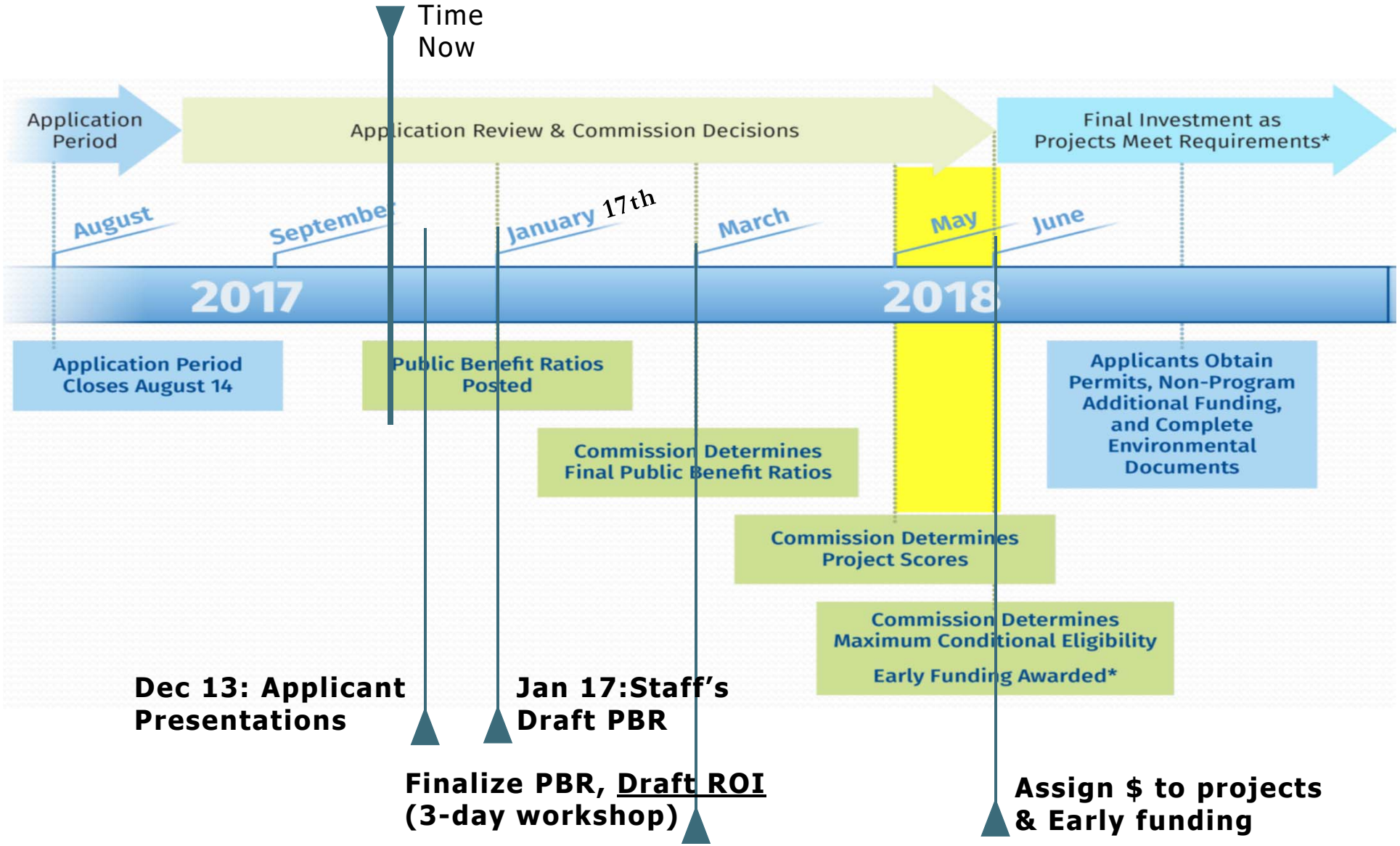
Class 2 as 'back-up' for Reserved amount

✓ Participation requests > **400,000** AFY

Participation (Diversions into Storage)



Proposition 1: Process & Schedule

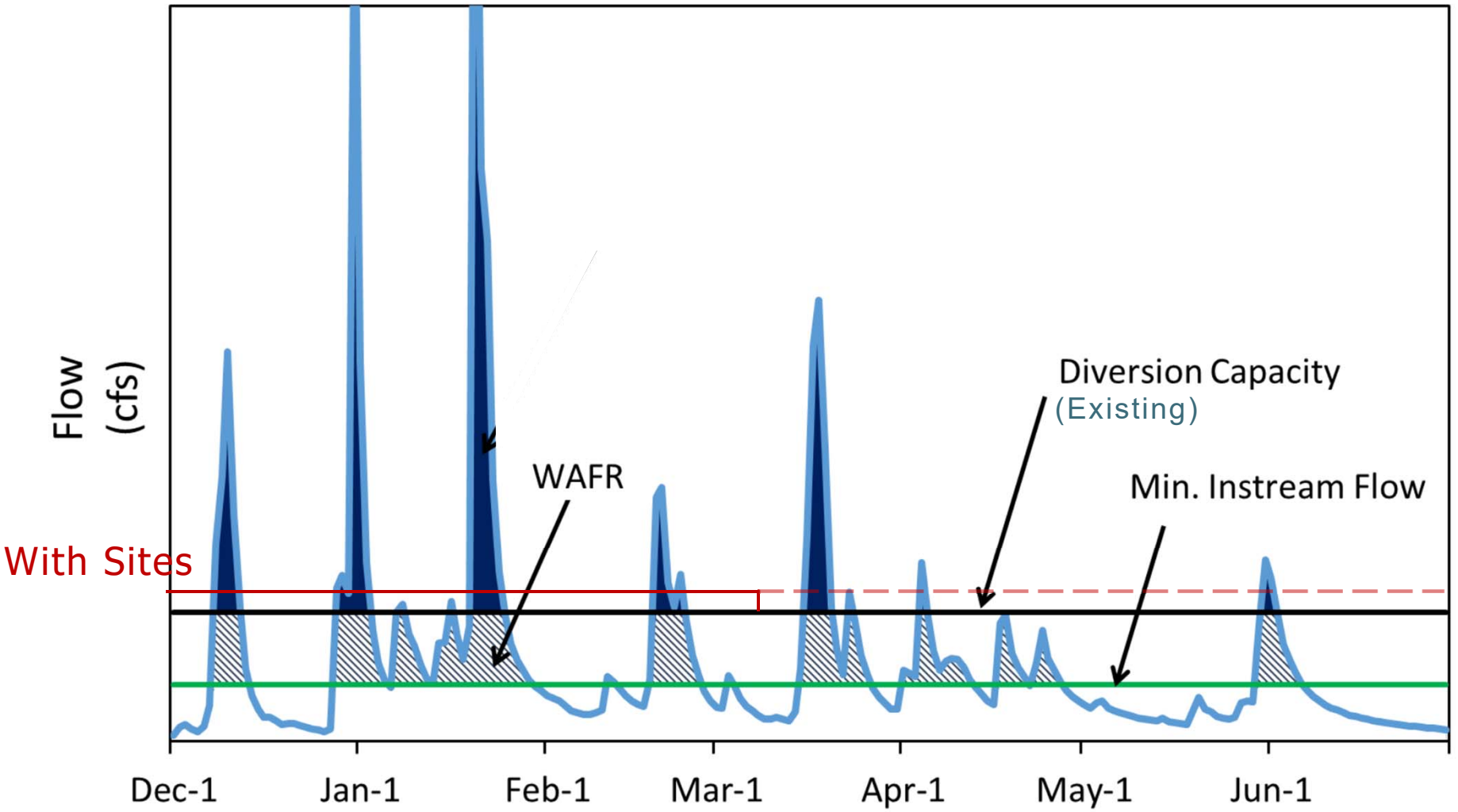


Proposition 1: Site's Executive Summary

- ✓ Beneficiary pays principle
  - Capital from Prop 1 & water user bonds
  - O&M: Water sales & hydropower
- ✓ Offers 40% of reservoir's usable capacity to public benefits
- ✓ Prop 1 water controlled by State's Resource Managers
- ✓ Stores water in wetter years to ameliorate drought conditions

A new water management tool

Proposition 1: Diversions into Storage



Source: Adapted from DWR System Reoperation presentation to Water Commission (2017 Sept 20)

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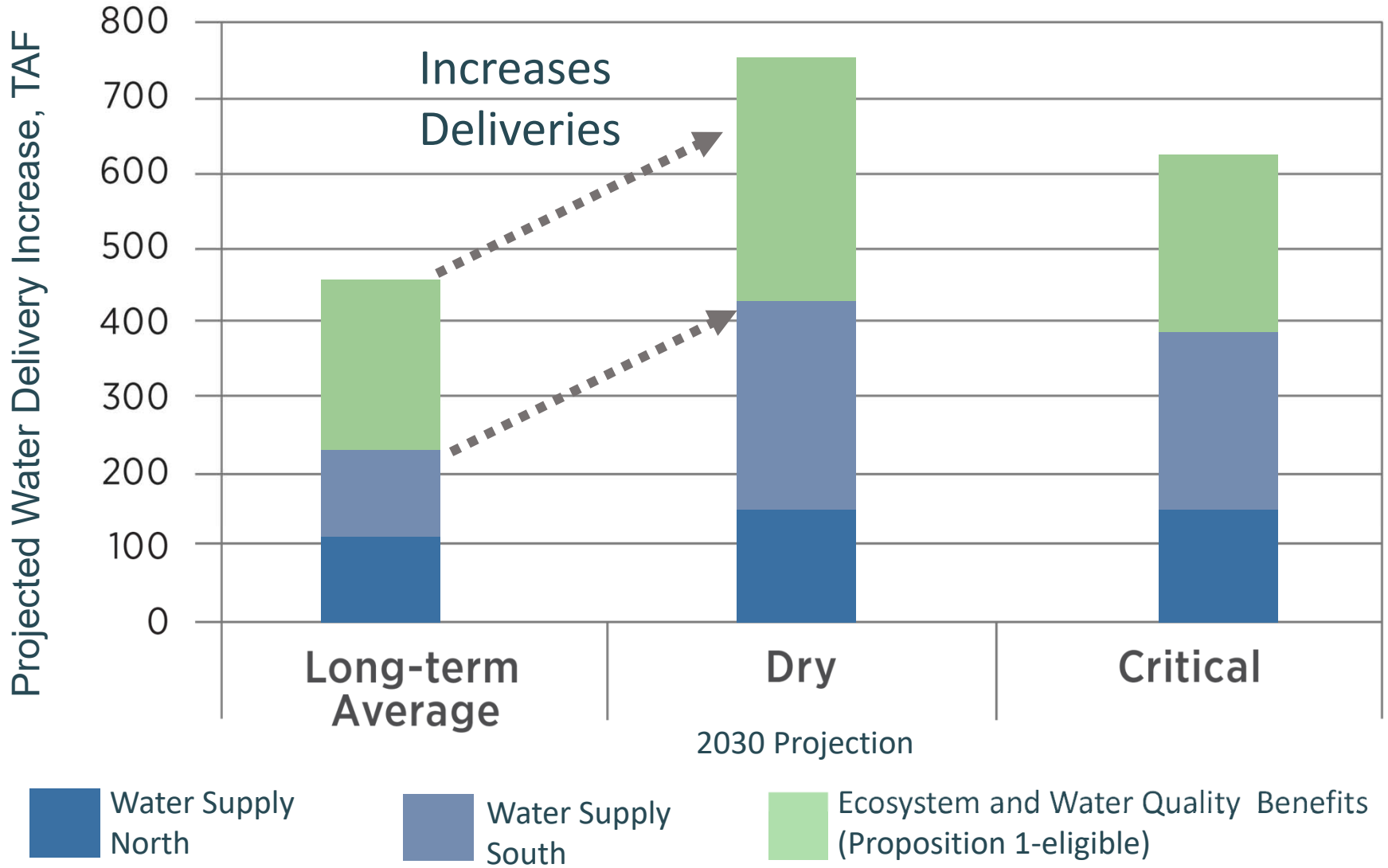
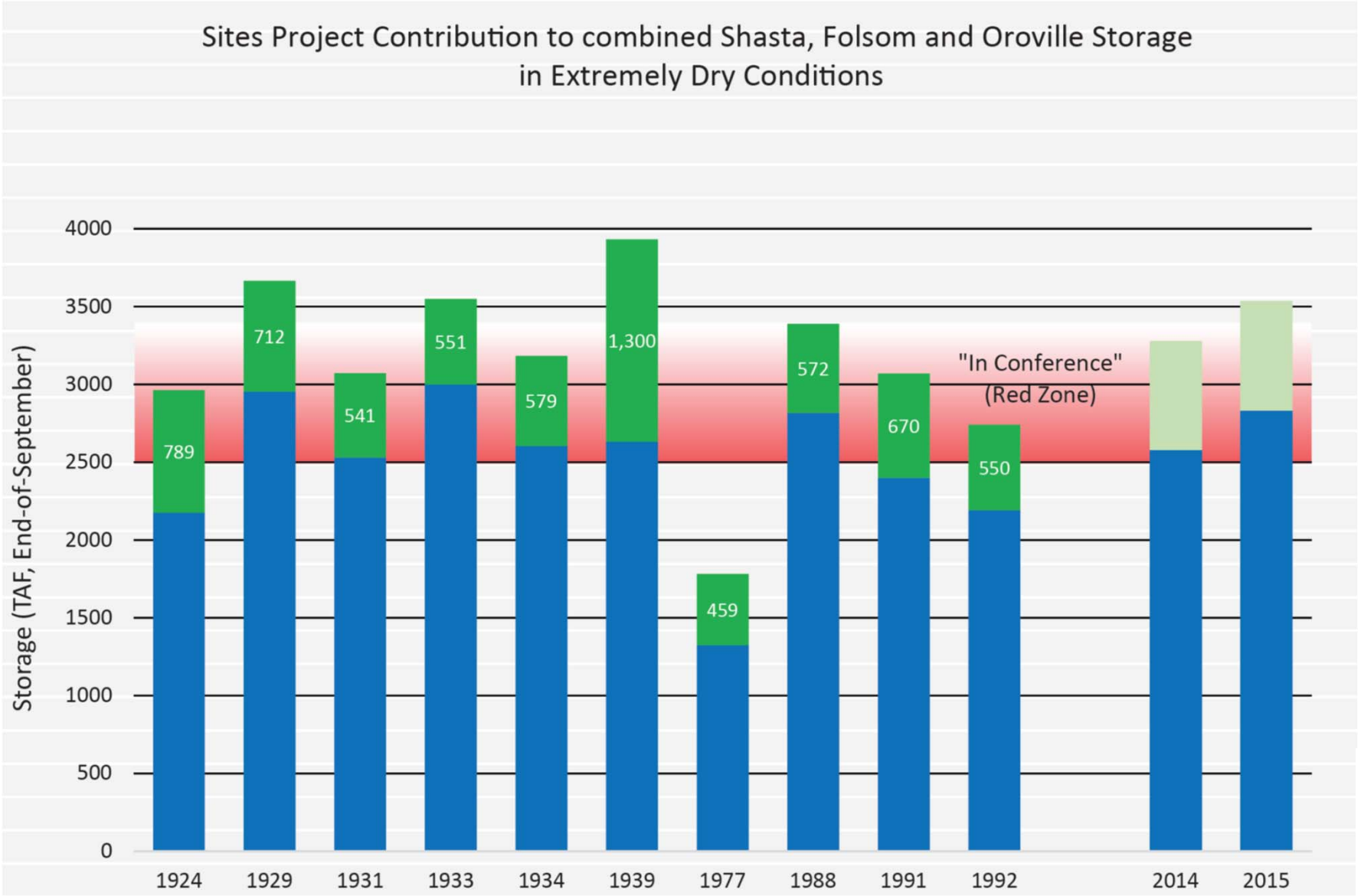
Proposition 1: Reliability

Greater Deliveries in Dry Years



Proposition 1: Drought Resiliency



Proposition 1: Aquatic Species Benefits

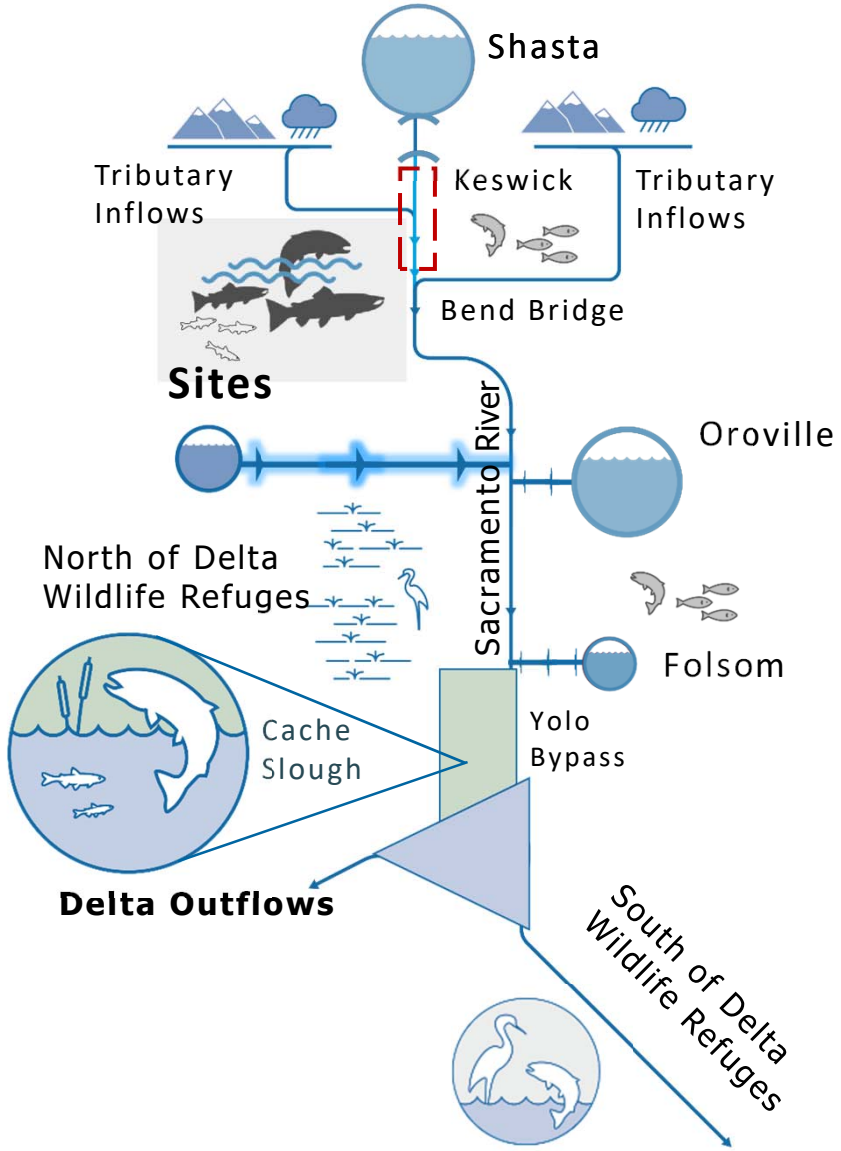
Winter-run chinook: increases cold water pool (especially in drier years) in Shasta and decreases summer/fall water temperature in the Sacramento River

Spring-run chinook: decreases summer/fall water temperature in the Sacramento and Feather rivers

Fall-run and Late Fall-run chinook: improves fall flow stability in Sacramento, Feather and American rivers

Delta smelt: provides summer-fall pulse flow to Cache Slough for phytoplankton-zooplankton food

Waterfowl: augments incremental Level 4 water supply



Proposition 1: Monetized Benefits

$122 MILLION in annual public benefits

The Sites Reservoir

Delivers about **441,000** acre-feet of water per year to California's water system for...

Proposition 1 Eligible Benefit (in $M)	Annual Benefits ($M)
Ecosystem Improvement	**$ 111**
Water Quality	~
Recreation	$7
Flood Damage Reduction	$4
Emergency Response	~
Proposition 1 Non-Eligible Benefits (in $M)	
Water Supply	$175
Hydropower	$19
Total Monetized Benefit Annually	**$317**
PUBLIC BENEFIT RATIO: 2.1 to 4.5	

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Draft EIR/EIS: Process

Sites Project Draft EIR/EIS:

Prepared in accordance with the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA)

Discloses significant environmental impacts and describes proposed mitigation measures

Analyzes a No-Action Alternative and five action alternatives that meet the project's objectives and purpose and need

Evaluates and describes the environmental effects associated with construction and operation of the Sites Reservoir and associated facilities

Allows for public and agency review and comment that will Inform continued project development

Sites Project Objectives and Purpose and Need:

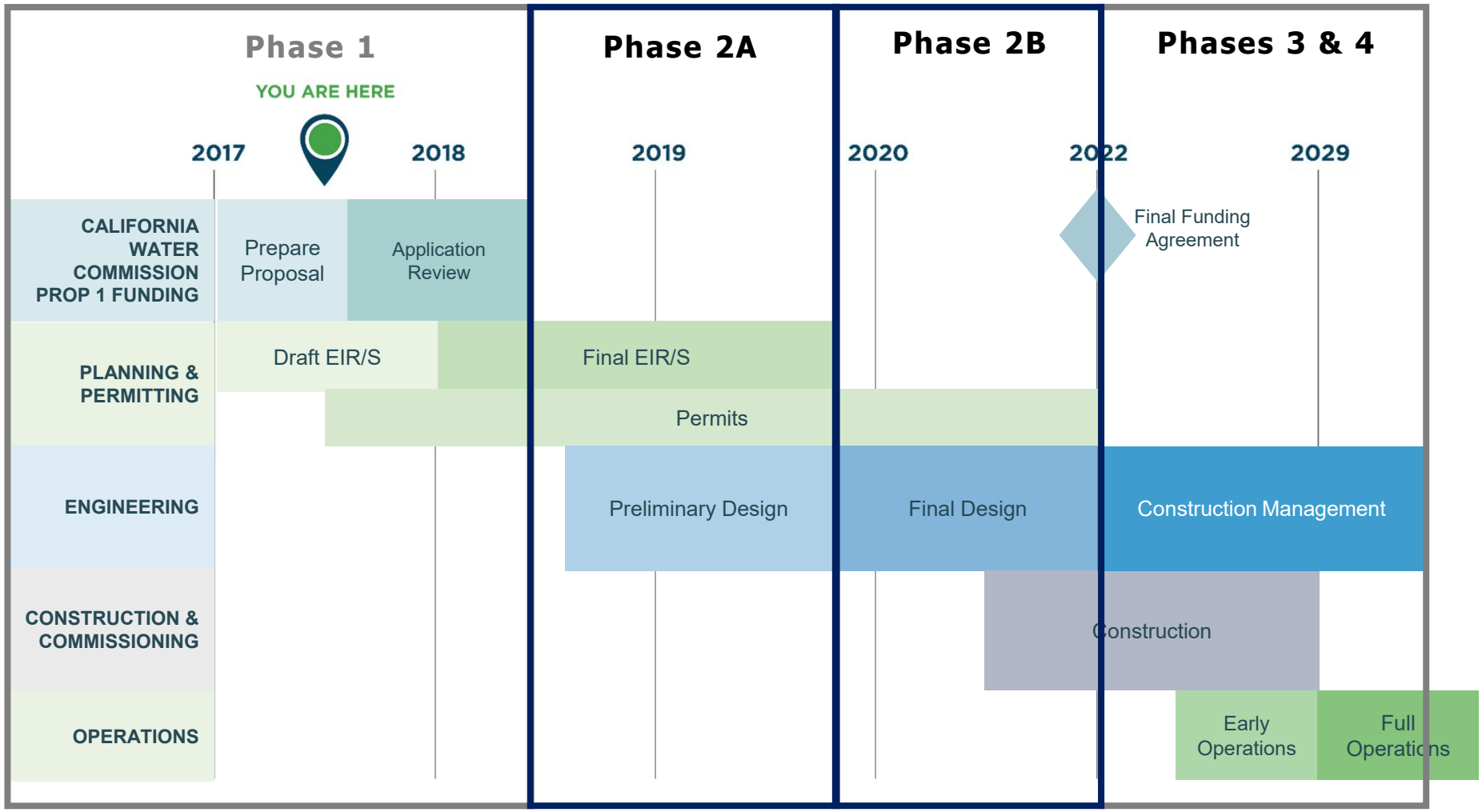
- **Enhance water management flexibility** in the Sacramento Valley
- **Increase reliability** of California water supplies
- **Provide storage and operational benefits** to benefit Delta water quality and improve ecosystems

Lead Agencies:

CEQA
Sites Project Authority (Authority)

NEPA
U.S. Bureau of Reclamation (Reclamation)

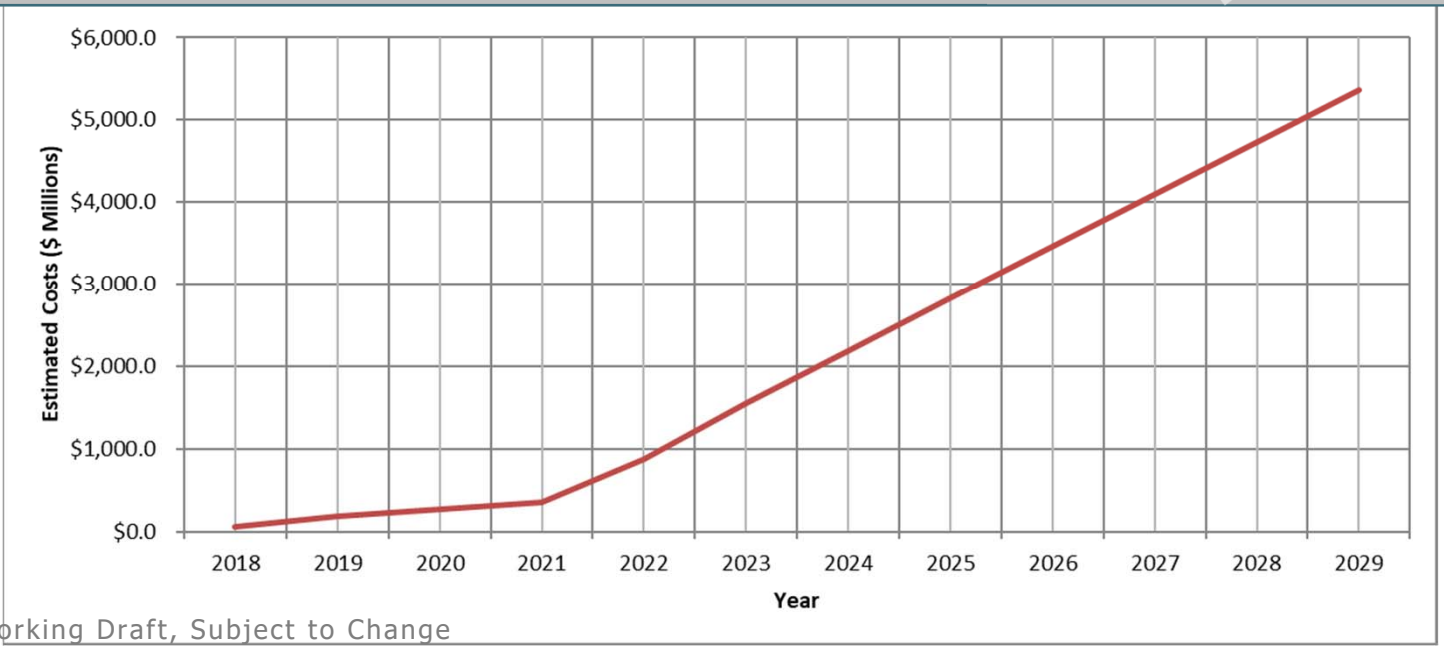
Phase-level Schedule



Phased Implementation Strategy

Phase	Start	Finish	Estimate ($million)
Phase 2A	June 2018	December 2019	$177
Phase 2B	January 2020	December 2021	$149
Phase 3A	January 2022	December 2022	$529
Phase 3B	January 2023	December 2023	$691
Phase 4	January 2024	January 2030	$3,812
TOTALS			**$5,358**

Work In Progress



Phase 2 Drivers

- ✓ Prop 1 (& WIIN Act) define the schedule
- ✓ Key factors for water user participation
  - Water Commission's Decisions
  - Regulatory Requirements
  - WIIN Act Application and Timing
  - Water rights process
  - Design-construct risks
  - Financing options & terms
- ✓ Power considerations

Phase 2 will be more challenging than Phase 1

Approach

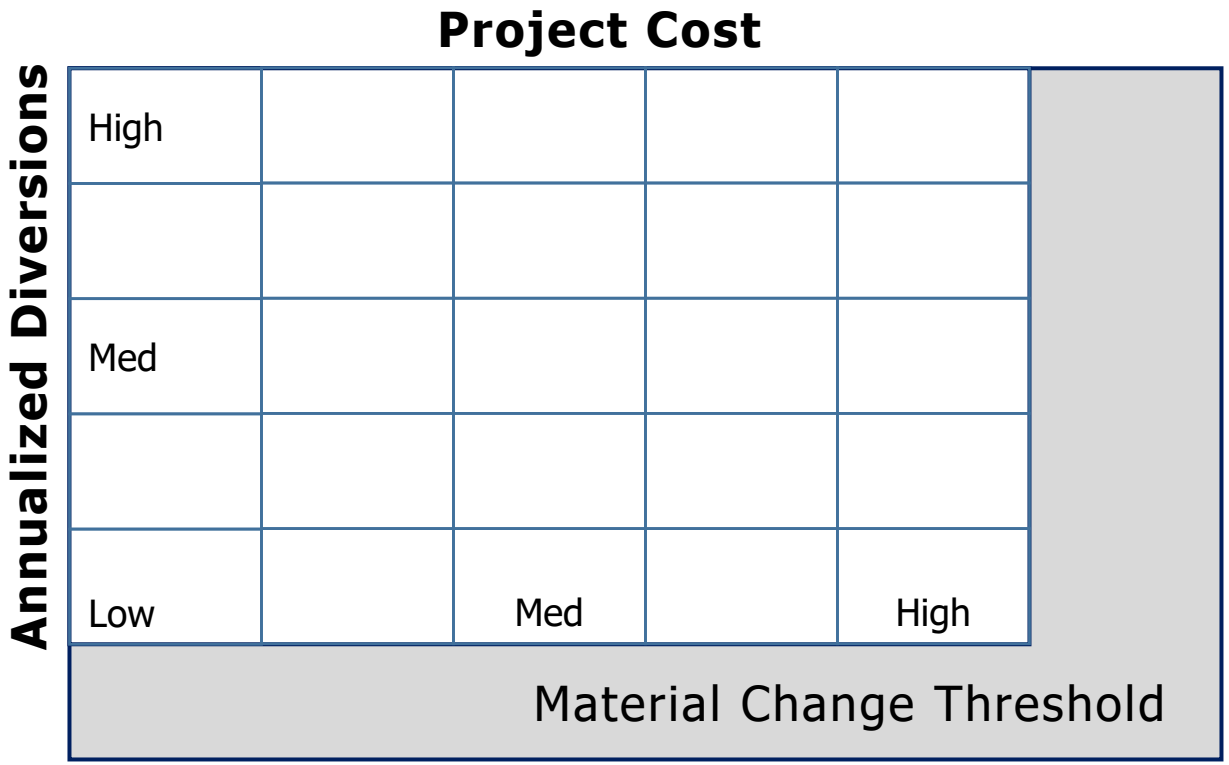
- ✓ Establish the risk-adjusted TGMP (~ P_{80})
  - Conduct a risk assessment
- ✓ Establish affordable operational targets
  - Risk-adjusted operational scenarios
  - Confirm operations align with beneficiary pays principle
- ✓ Evaluate alternative repayment methods
- ✓ Take advantage of AB 2551 (CalFed projects)
  - Number vs. size of contracts
- ✓ Reverse engineer & optimize the project
  - Align design to construction packages
  - Vary level of Preliminary design

Complete phase 1 rebalancing process

Phase 2 Scope of Work

- ✓ Program Management
- ✓ Environmental Review, Permitting, & Mitigation
- ✓ Temporary Right of Entry - field date collection
  (extensive geotechnical exploration and biological surveys)
- ✓ Agreements
  - Operational: Reclamation (CVP) & Department (SWP)
  - Use of Facilities: TCCA/Reclamation & GCID
  - Prop 1 Public Benefits: DFW, SWRCB, DWR
  - WIIN Act Benefits: Interior
  - Hydropower/pump-storage
  - Grid Interconnection
- ✓ Engineering
  - Advanced risk assessment (Monte Carlo)
  - Align design with construction packages
  - Finalize performance requirements
  - Preliminary design – variable levels of complete (30% to 65%)
  - Pump/generator design

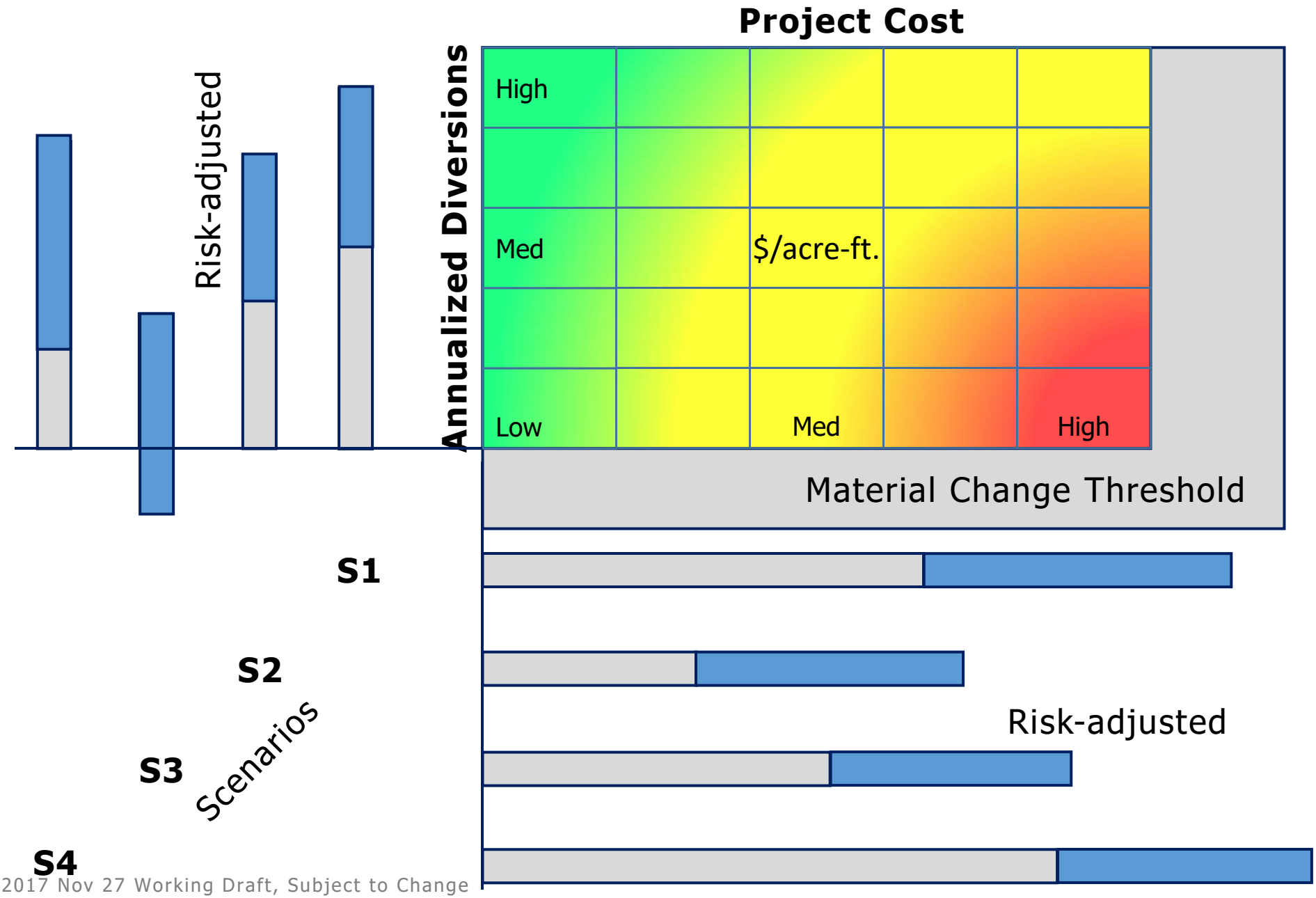
Rebalancing Process: Risk Matrix



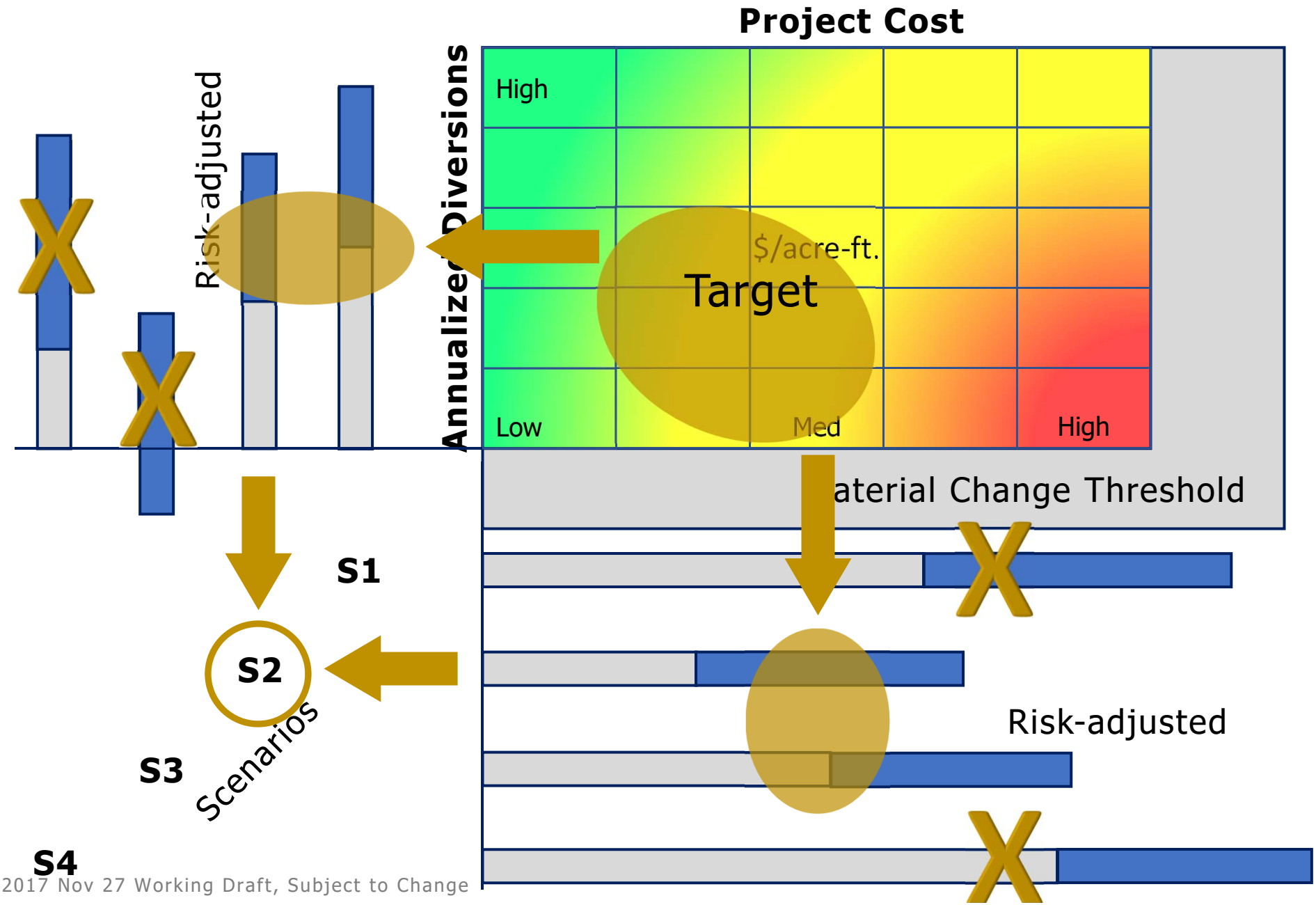
Primary Risks & Uncertainties:

- Water Commission's WSIP participation decision (MCED)
- Department of Interior (WIIN Act) participation decision
- Unstable regulatory environment (multiple concurrent processes)
- Construction costs and schedule delays – What number is the TGMP?
- Cooperative operations agreements w/ CVP & SWP
- Financing, pre- & post-construction (w/ vs. w/o WIFIA)

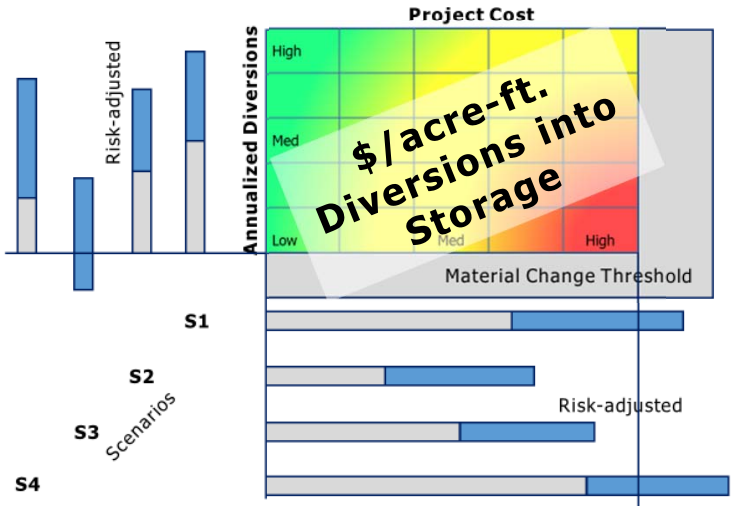
Rebalancing Process: Risk Matrix



Rebalancing Process - Concept



Rebalancing Process: Phase 2 Participation



Water Balance
(Income Statement)

Participation	Qty
Loses:	
Evaporation	- A
Seepage	- B
Local Mitigation	- C
Delta Carriage	**- D**
Conveyance	- E
Other	- F
Deliveries	**G**

Back to Matrix

Iterations

$/acre-foot (Estimated Repayment Cost)

Financial Assumptions:

- Interest rate (w/ or w/o WIFIA)?
- Term (30 vs 40 years)?
- Credit Rating Premium?
- Interim financing? (e.g. phase 2 to phase 3)
- Interest During Construction (IDC)?
- Amount of debt (vs. self-fund)?

Discussion