North-of-the-Delta Offstream Storage

Case Study for the CWC

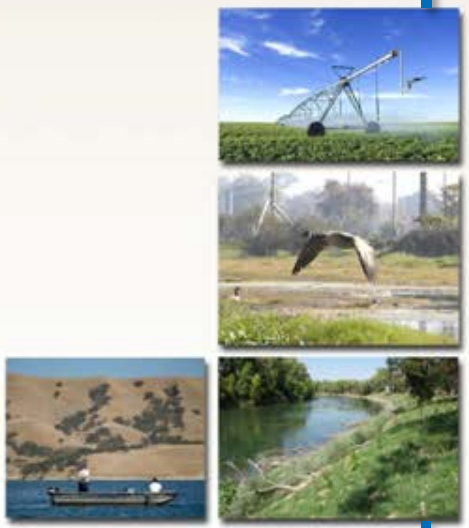
July 17, 2013

Purpose

NODOS as a case study in public and non-public benefits

Outline

- Background
- Measuring Benefits
- Allocation of Costs
- Financing



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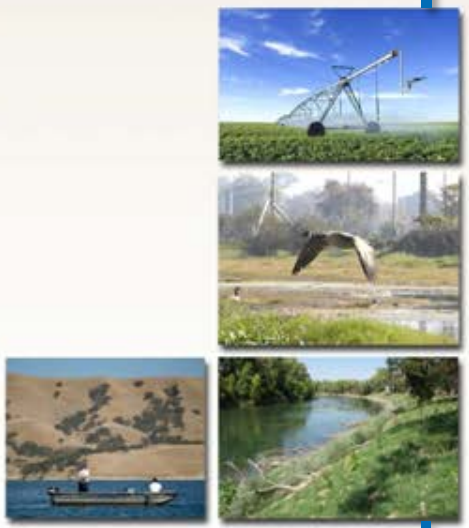
Caveats:

- Preliminary
- Subject to revision



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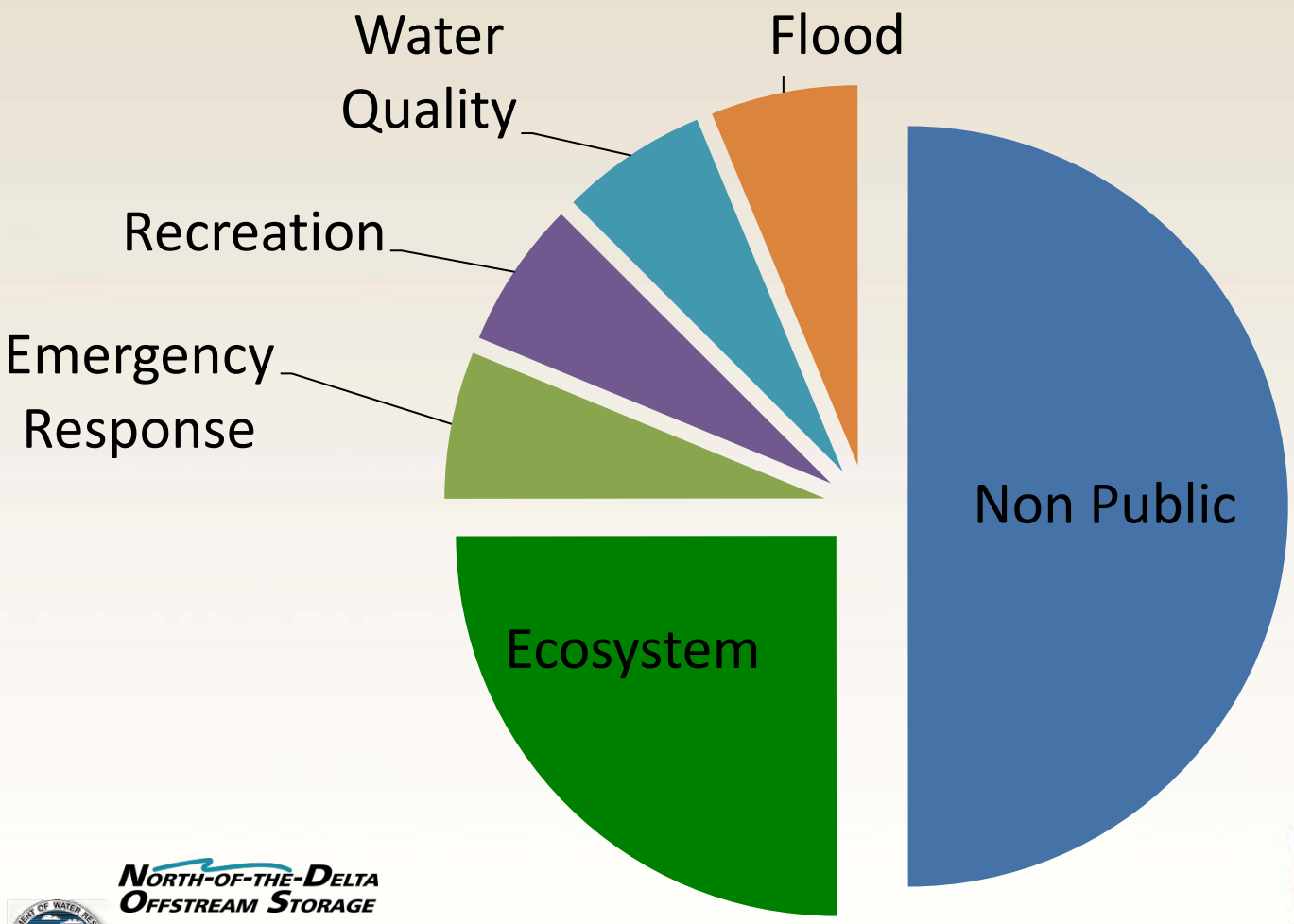
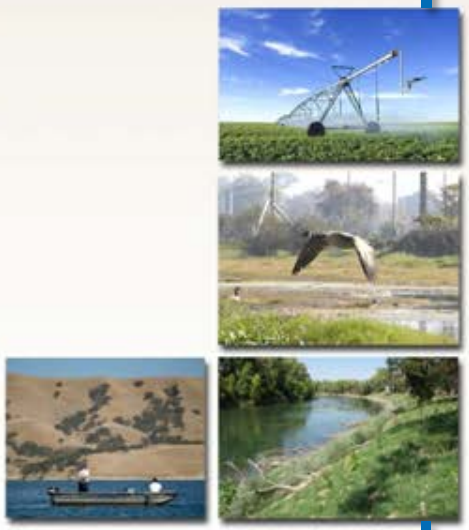
Proposed Water Bond - Requirements





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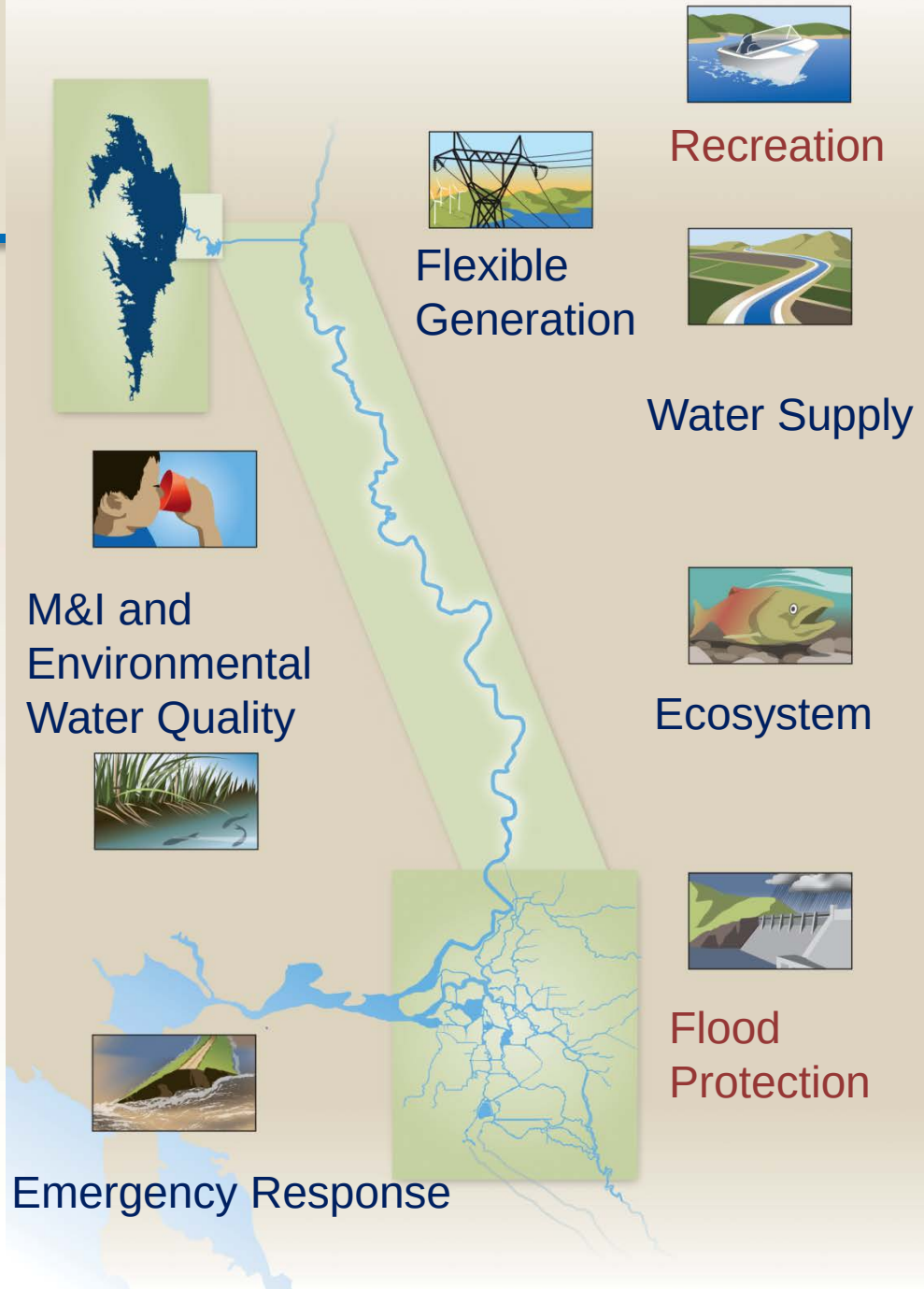
NODOS Objectives

Primary Objectives

and

Secondary Objectives



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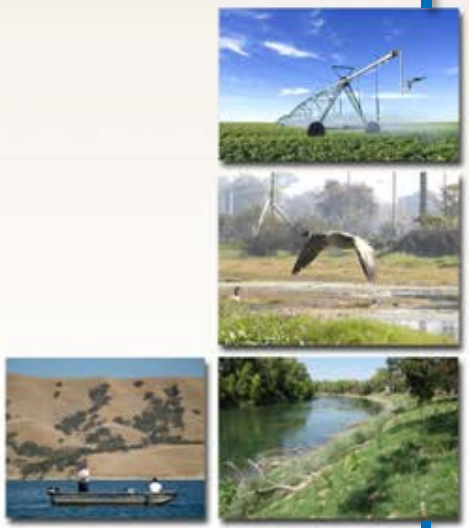
NODOS Alternatives Components

- Location
- Conveyance
- Size
- Operations



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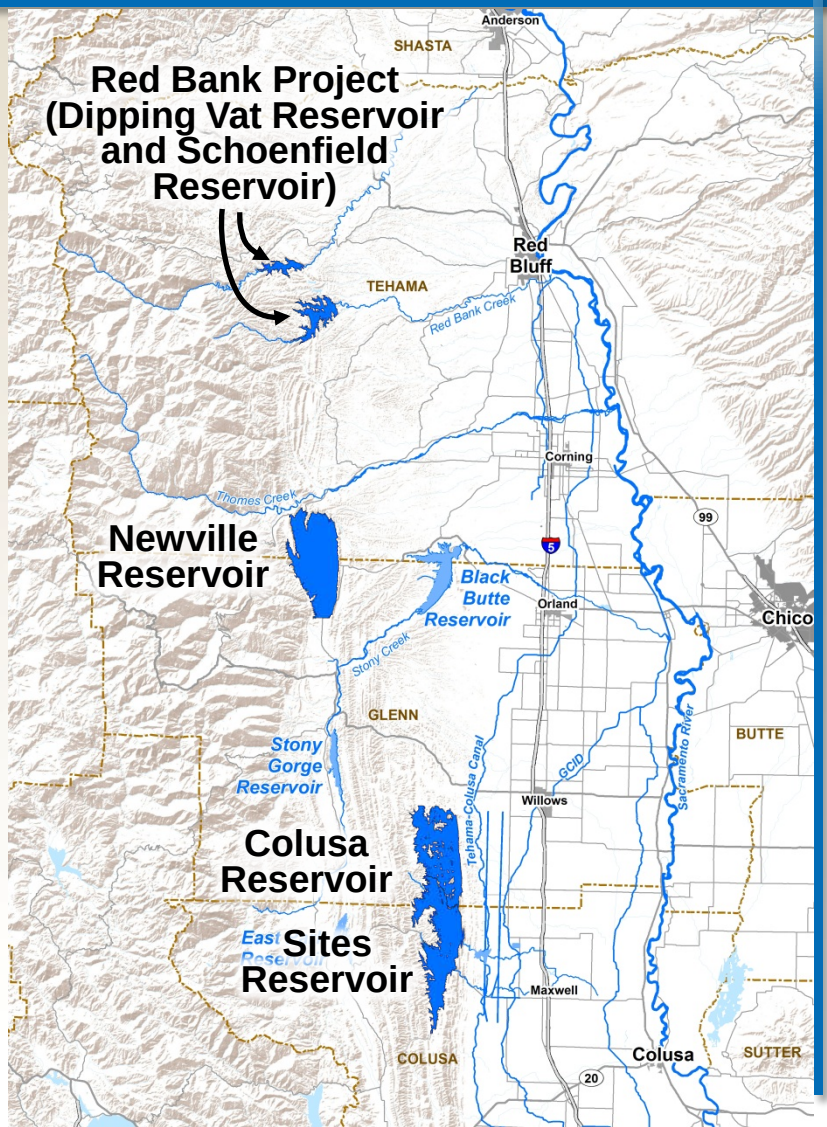
NODOS Reservoir Location Alternatives

- Red Bank Reservoir
- Newville Reservoir
- Colusa Reservoir
- Sites Reservoir



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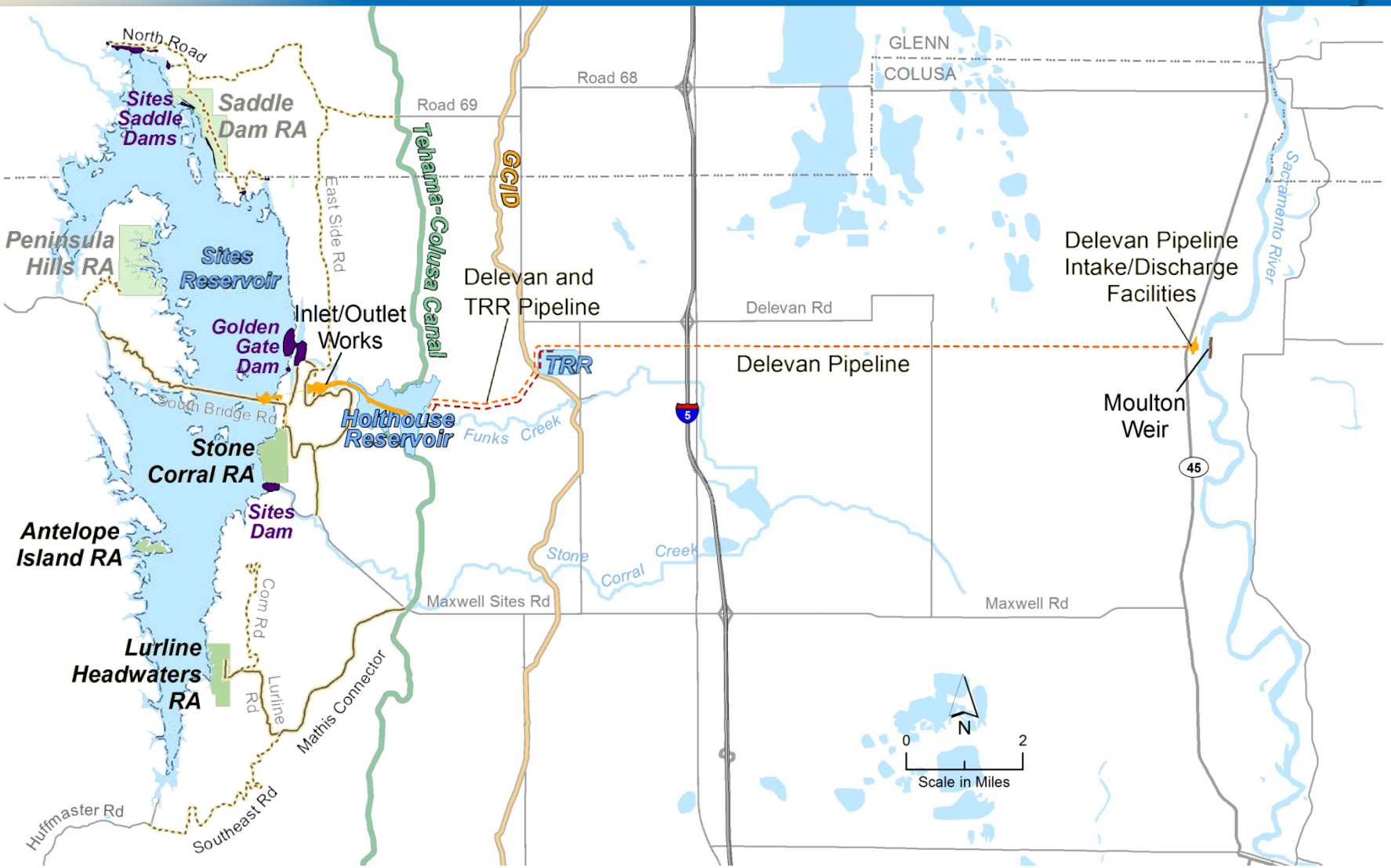
Proposed Sites Reservoir Elements

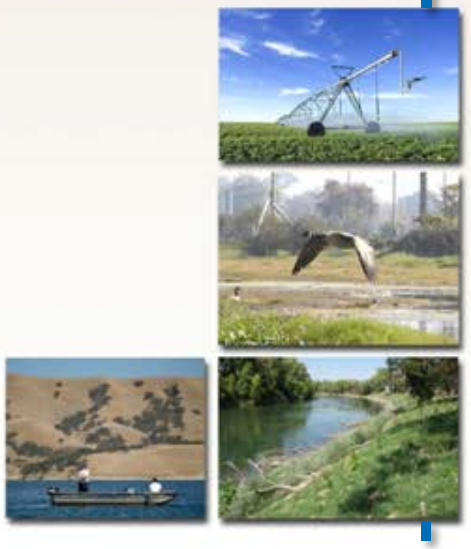


Benefits

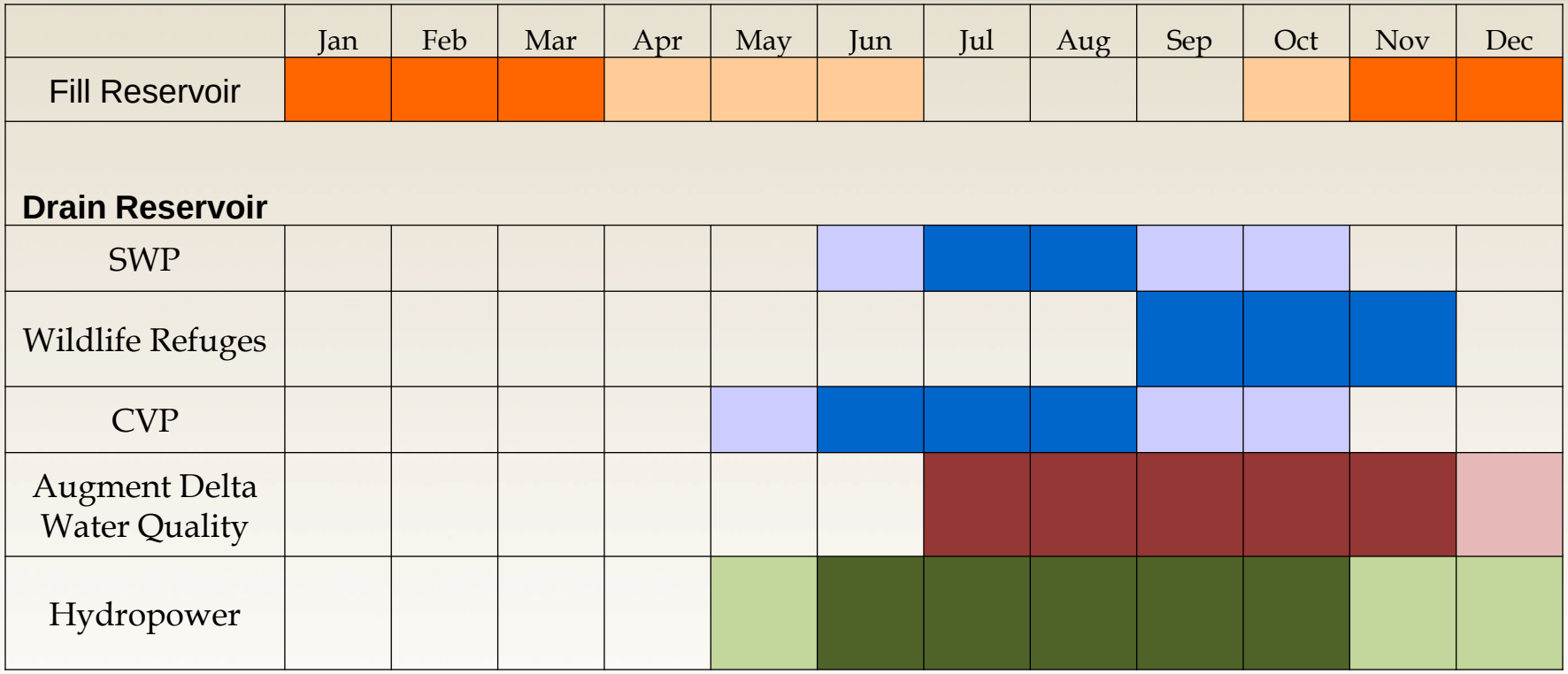
How

Methods

Where



How: Proposed Reservoir Operations



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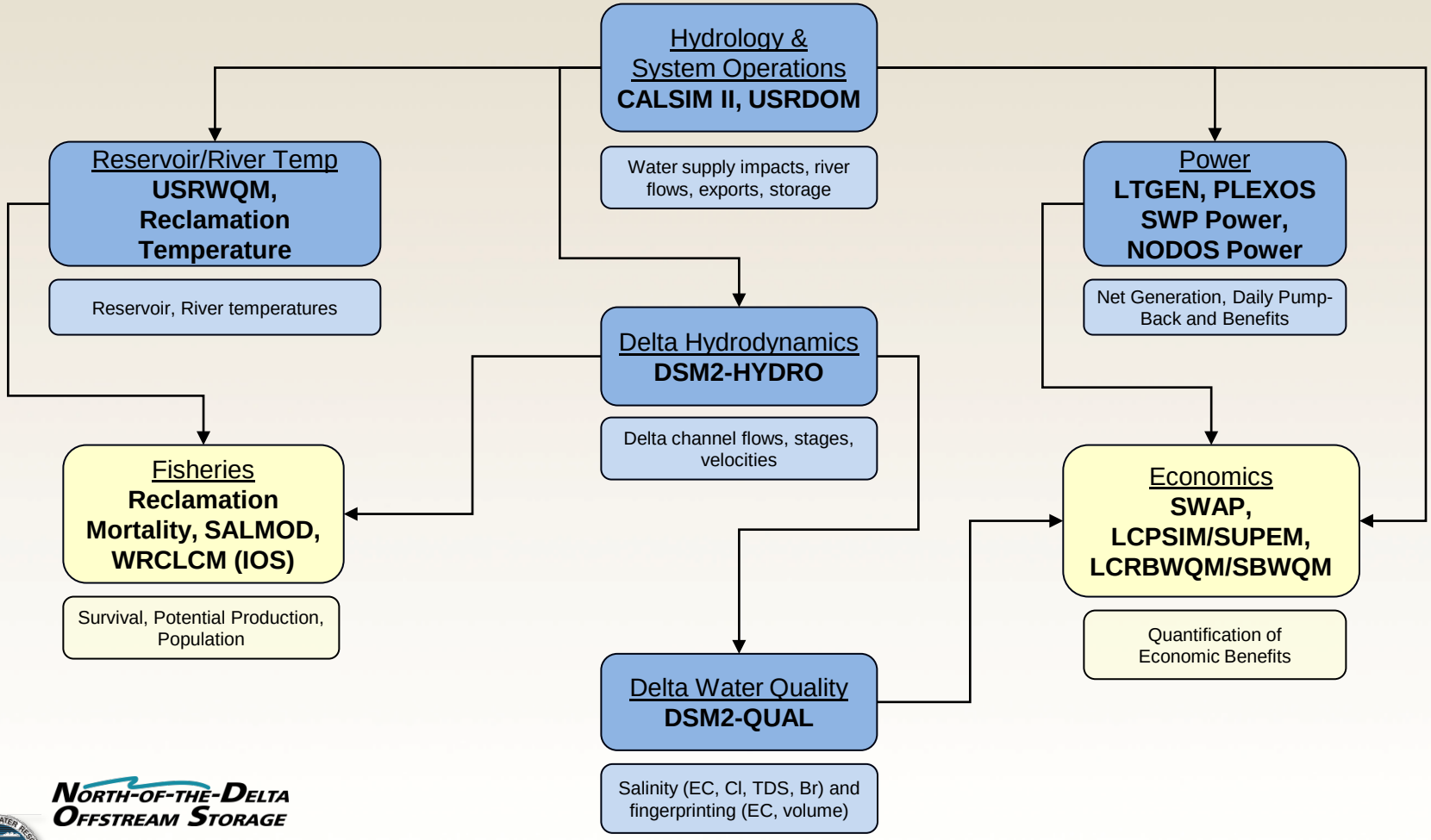
How: Integrated Operations

Methods: System-Wide Benefits



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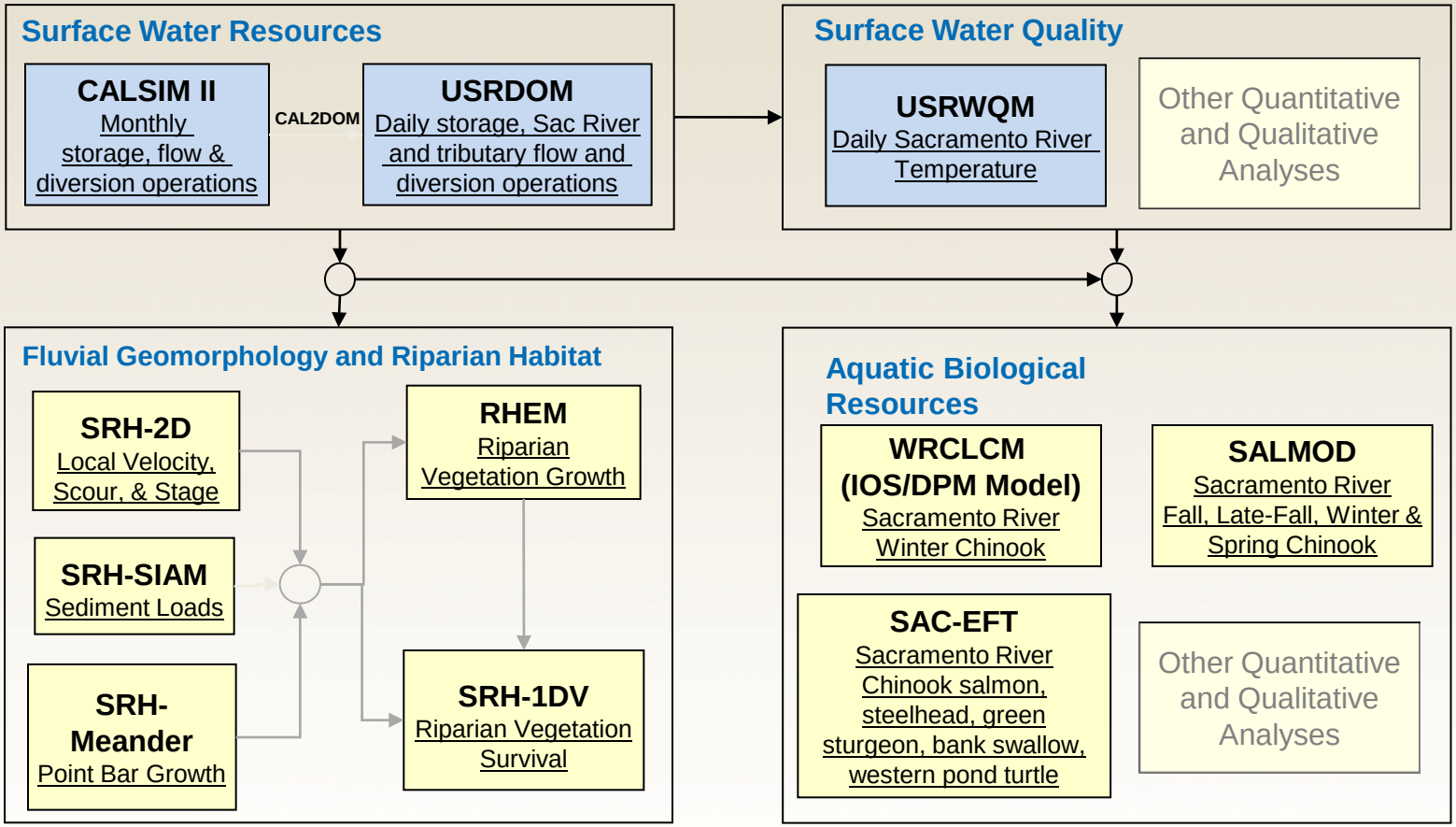
Methods: Local Benefits



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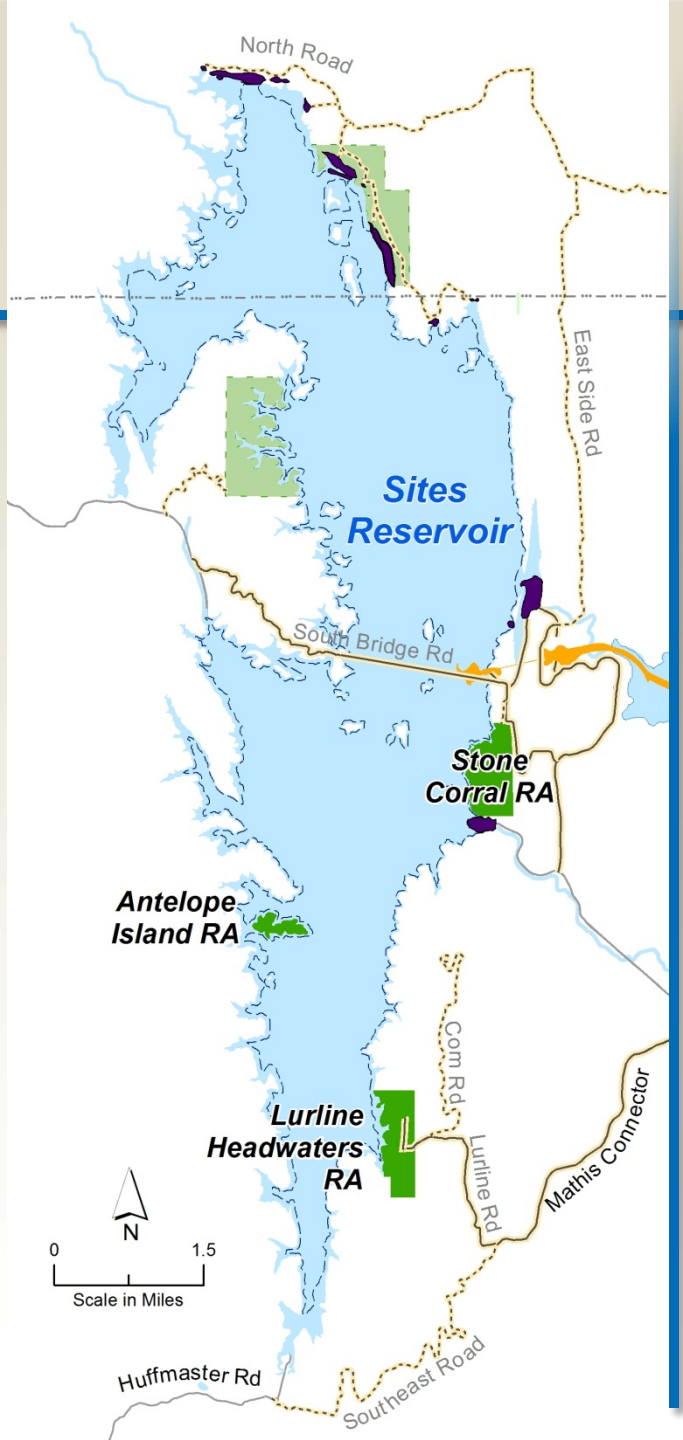
Recreation

- Two potential recreation sites
- Potentially improves lake levels at existing reservoirs



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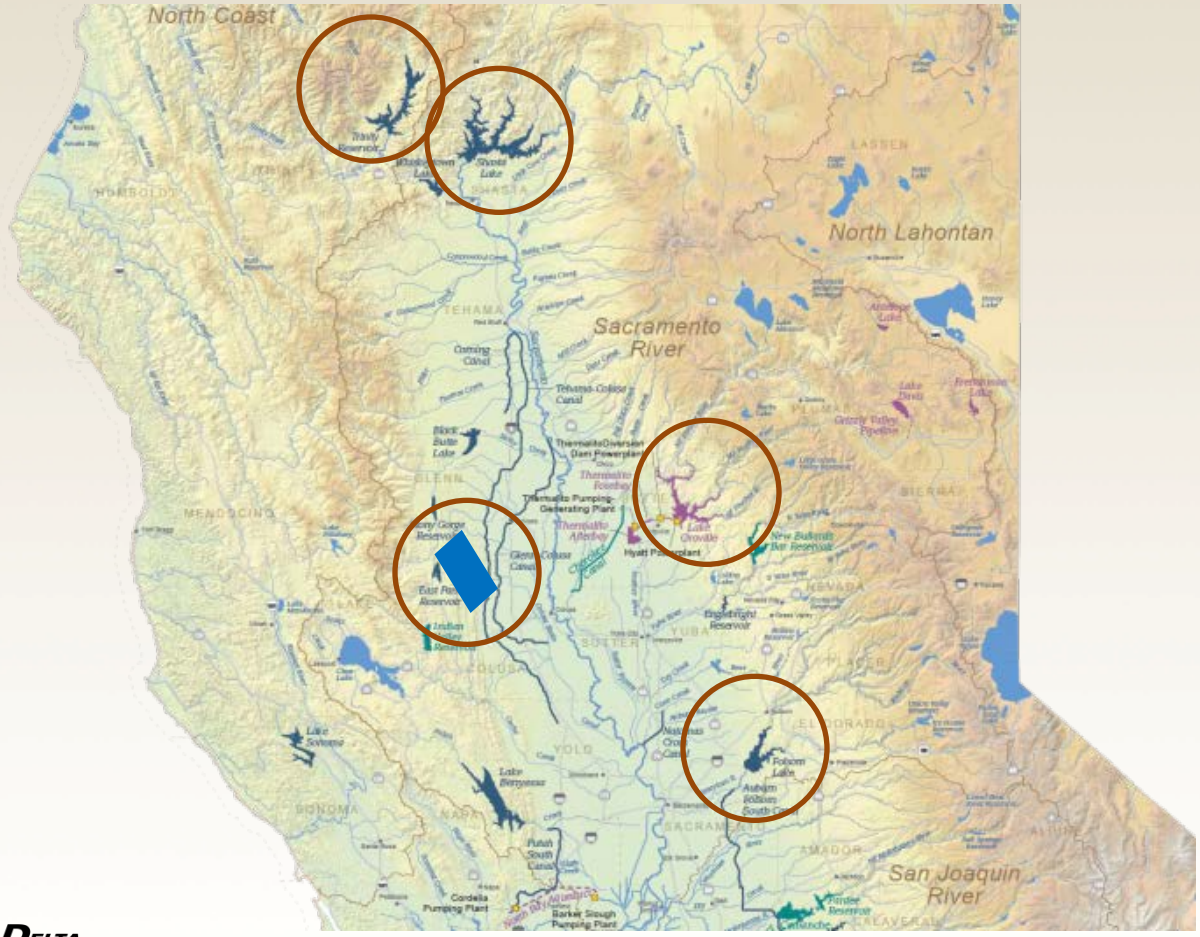
Recreation



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Flood Protection

Flood damage reduction in project vicinity (up to 8,600 acres)

Potential Contribution to Hydropower Generation

- Potentially generates up to 125 MW of new hydropower through pump-back facilities
- Could be quickly ramped up or down to complement other renewable energy sources

PHOTO: DWR. CASTAIC

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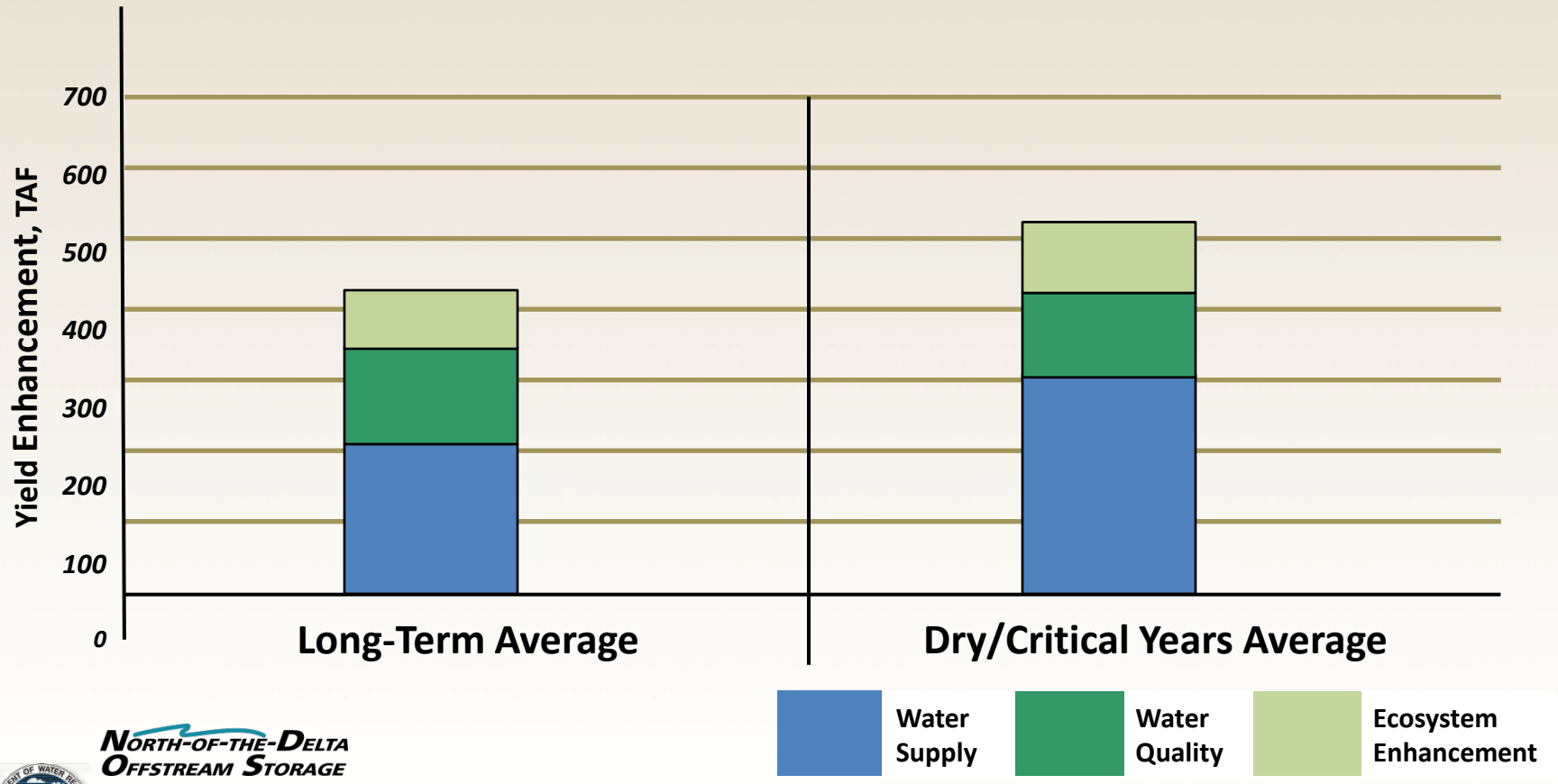
Water Benefits Summary



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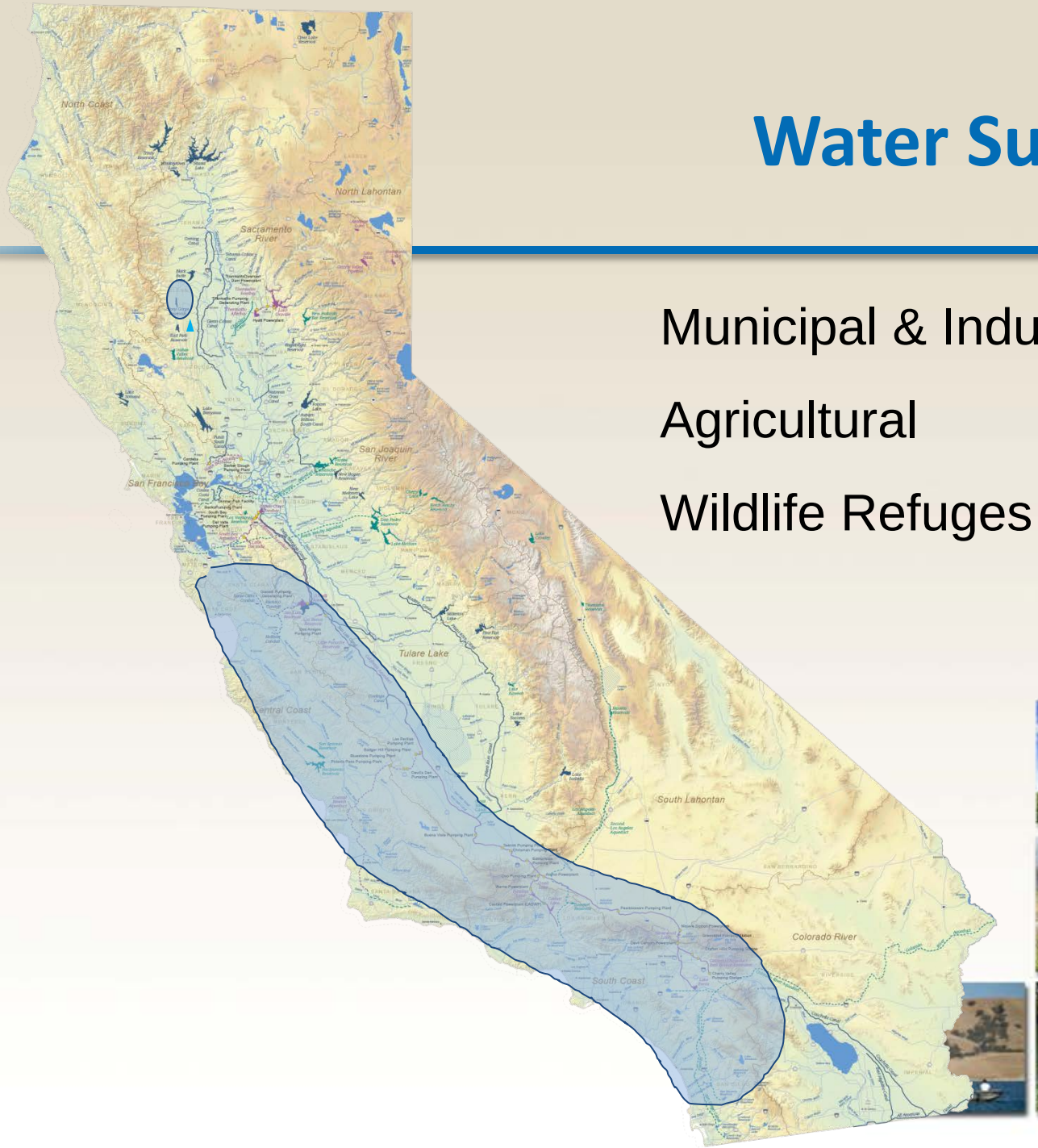
Water Supply

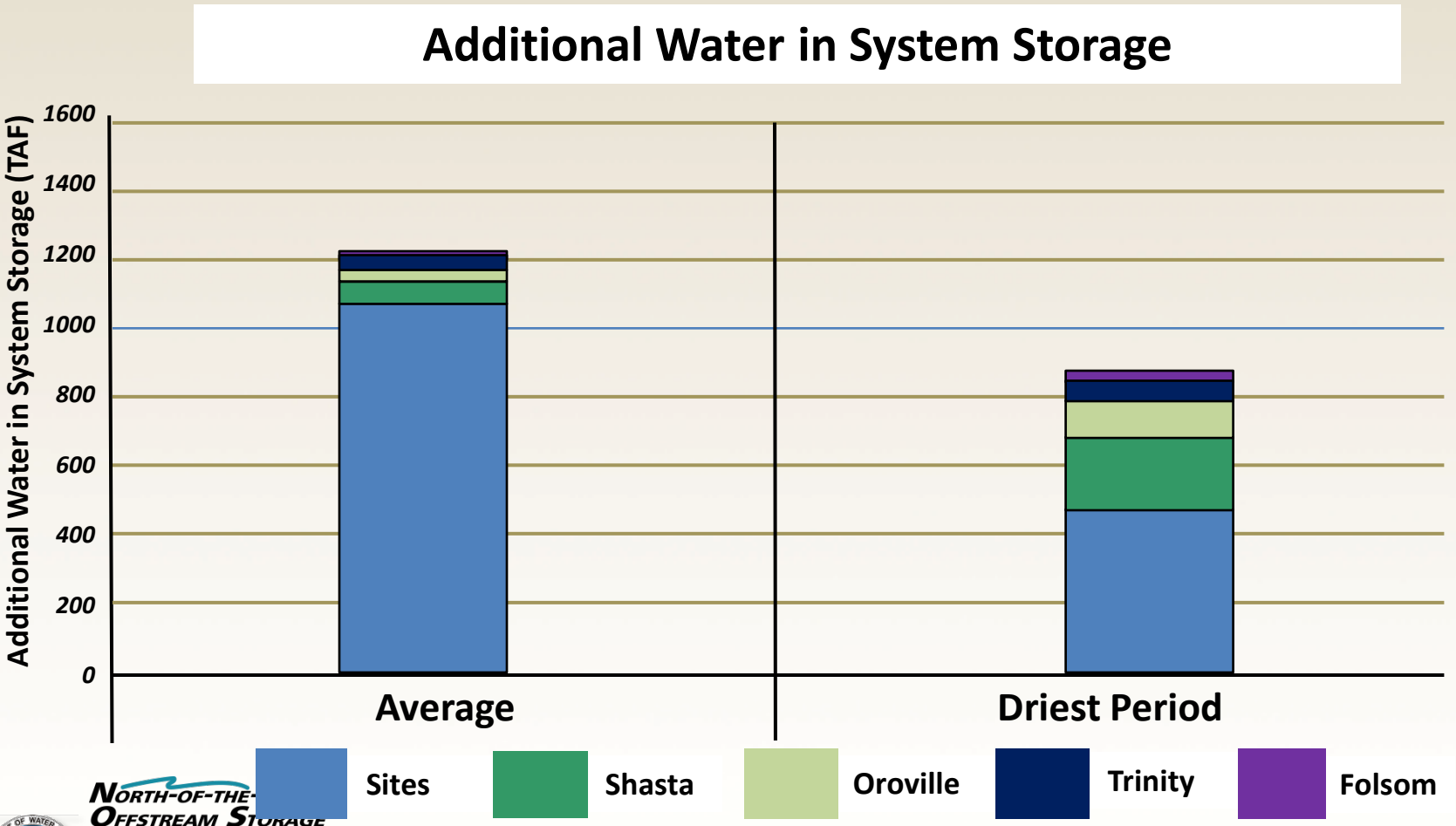
Municipal & Industrial

Agricultural

Wildlife Refuges



System Flexibility and Emergency Response



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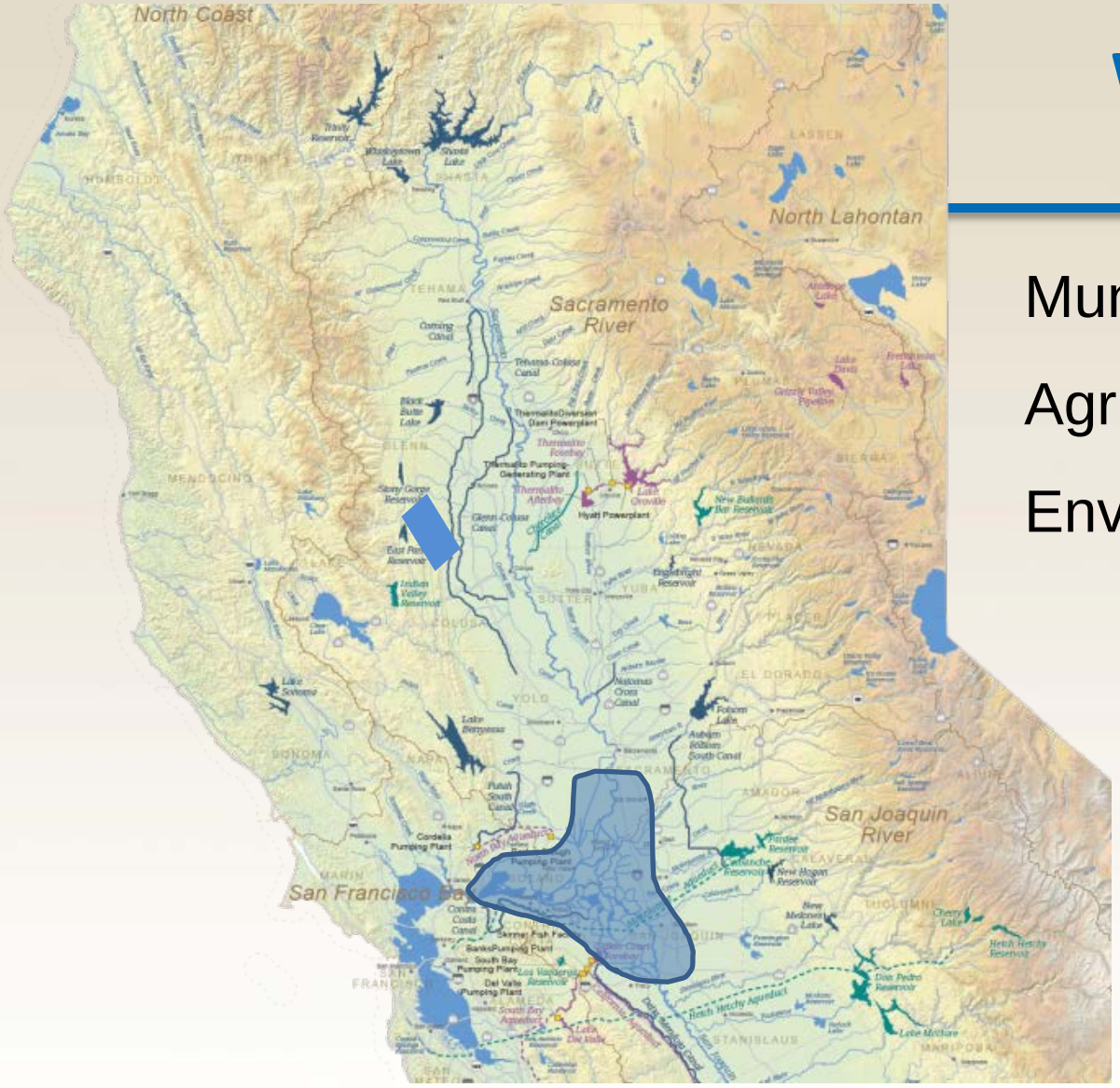
Water Quality



Municipal & Industrial

Agricultural

Environmental – X2

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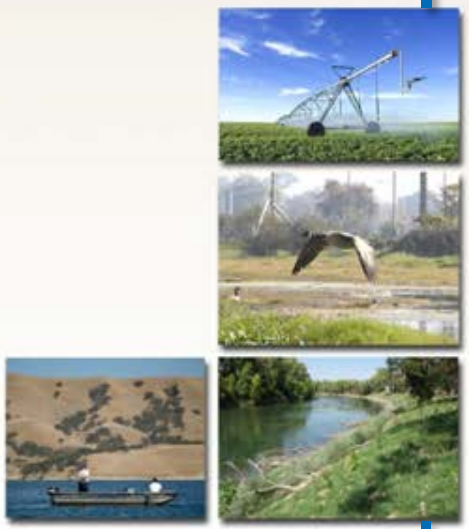
Ecosystem

Coldwater pool

In-stream flows

X2



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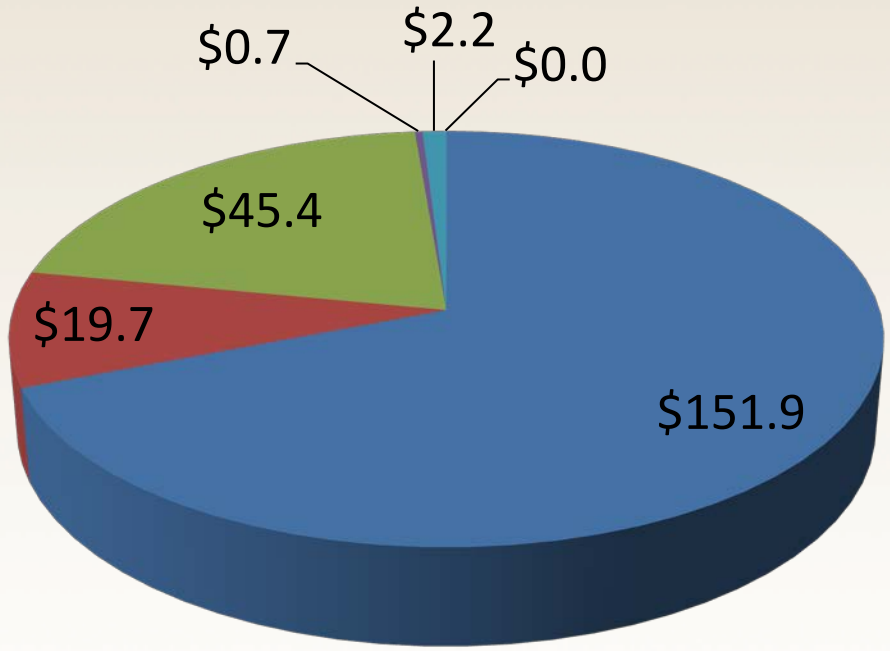
Estimated Federal Annual Benefits

100-Year Period of Analysis



- Water Supply
- Water Quality
- Ecosystem Enhancement
- Hydropower (Net Revenue)
- Recreation
- Flood Damage Reduction

Values in $millions

NORTH-OF-THE-DELTA OFFSTREAM STORAGE

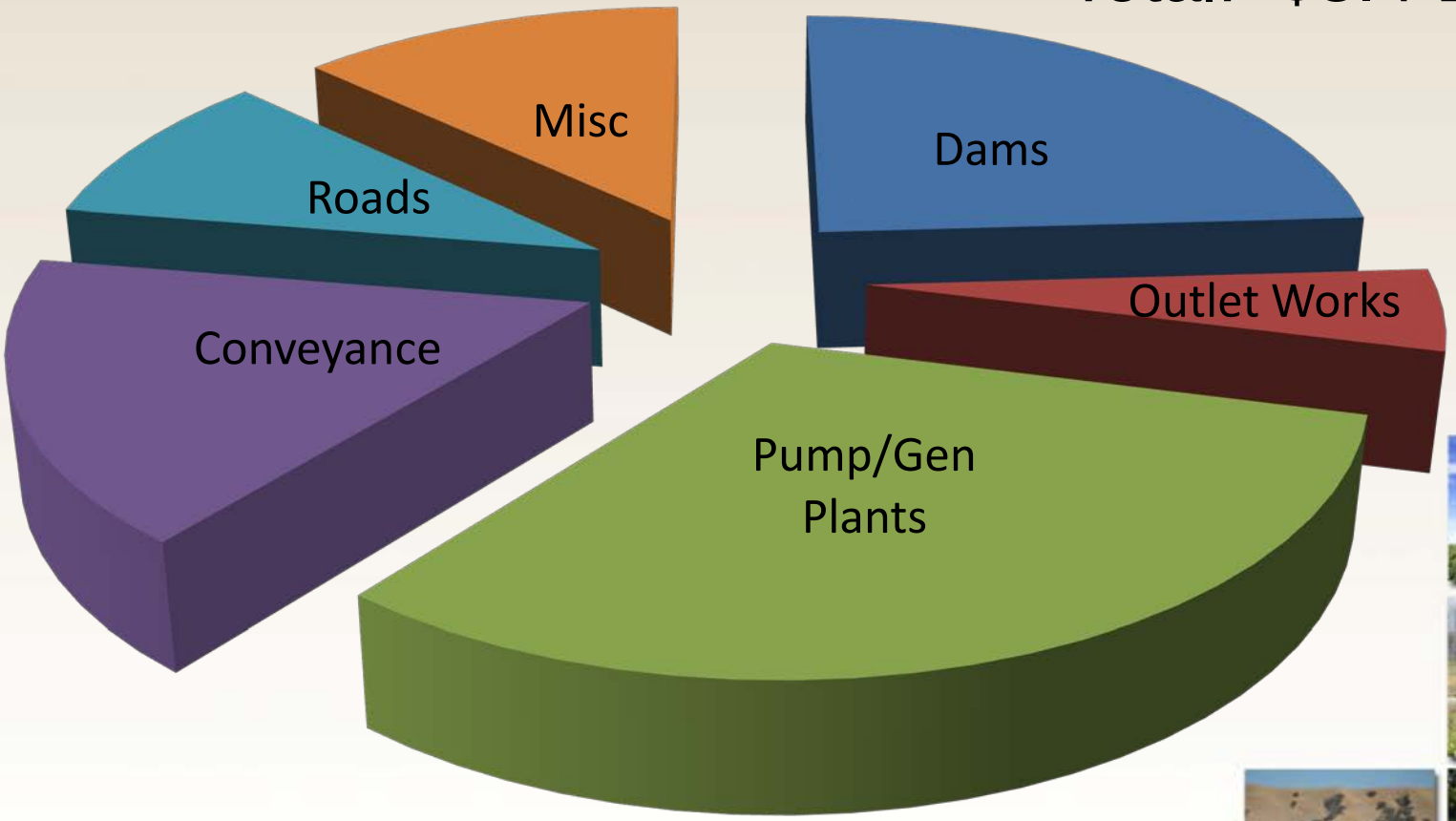
Preliminary Benefit Cost Ratio

	($M)
Proposed Project Costs	$3,384
Interest During Construction	$972
Annual Costs:	
Interest/Amortization	$176
Operations & Maintenance	$14
Total Annual Costs	**$190**
Total Annual Benefits	**$231**
Net Annual Benefits	**$41**
Benefit Cost Ratio	*1.2*

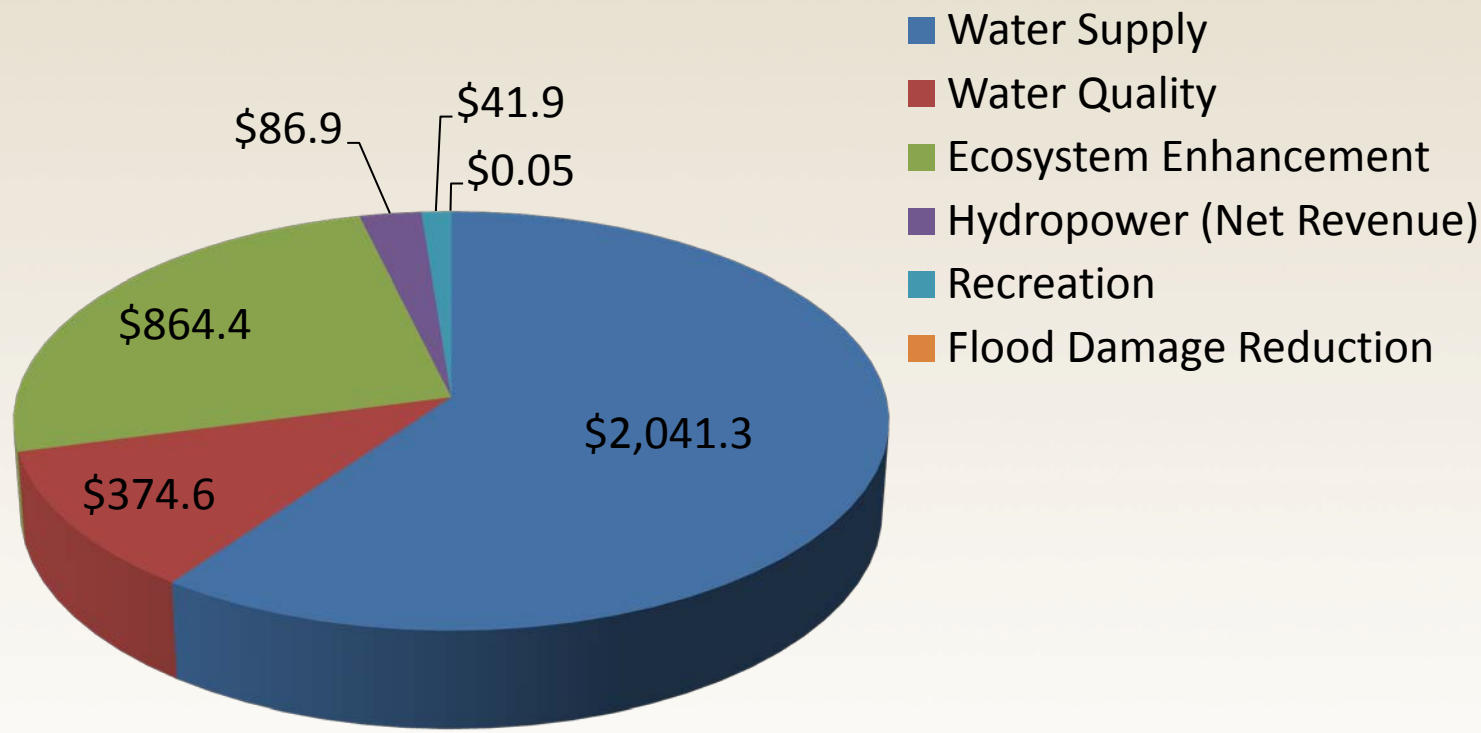
Cost Allocation

Preliminary Proposed Project Costs

Total: $3.4 Billion



Preliminary Total Cost Allocation Summary



Values in $millions

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Public and Non-Public Share

Benefit Type	Percentage Allocation	Public Allocation	Non-Public Allocation
Water Supply	53.4%		53.4%
Water Quality	11.0%	11.0%	
Ecosystem	31.9%	31.9%	
Hydropower	2.5%		2.5%
Recreation	1.2%	1.2%	
Flood Reduction	0.0%	0.0%	
TOTAL		**44.1%**	**55.9%**

Note: Ecosystem is 72.3% of Public Benefits

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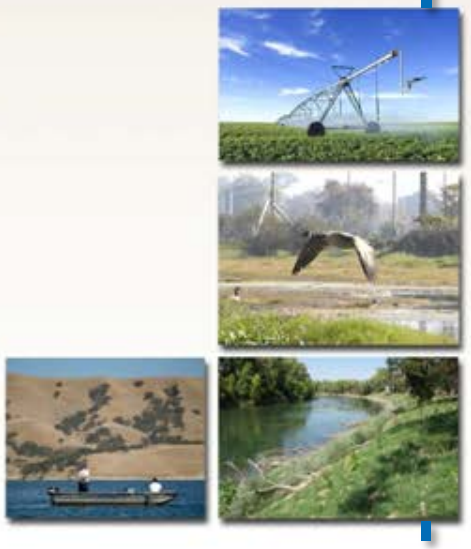
Finance



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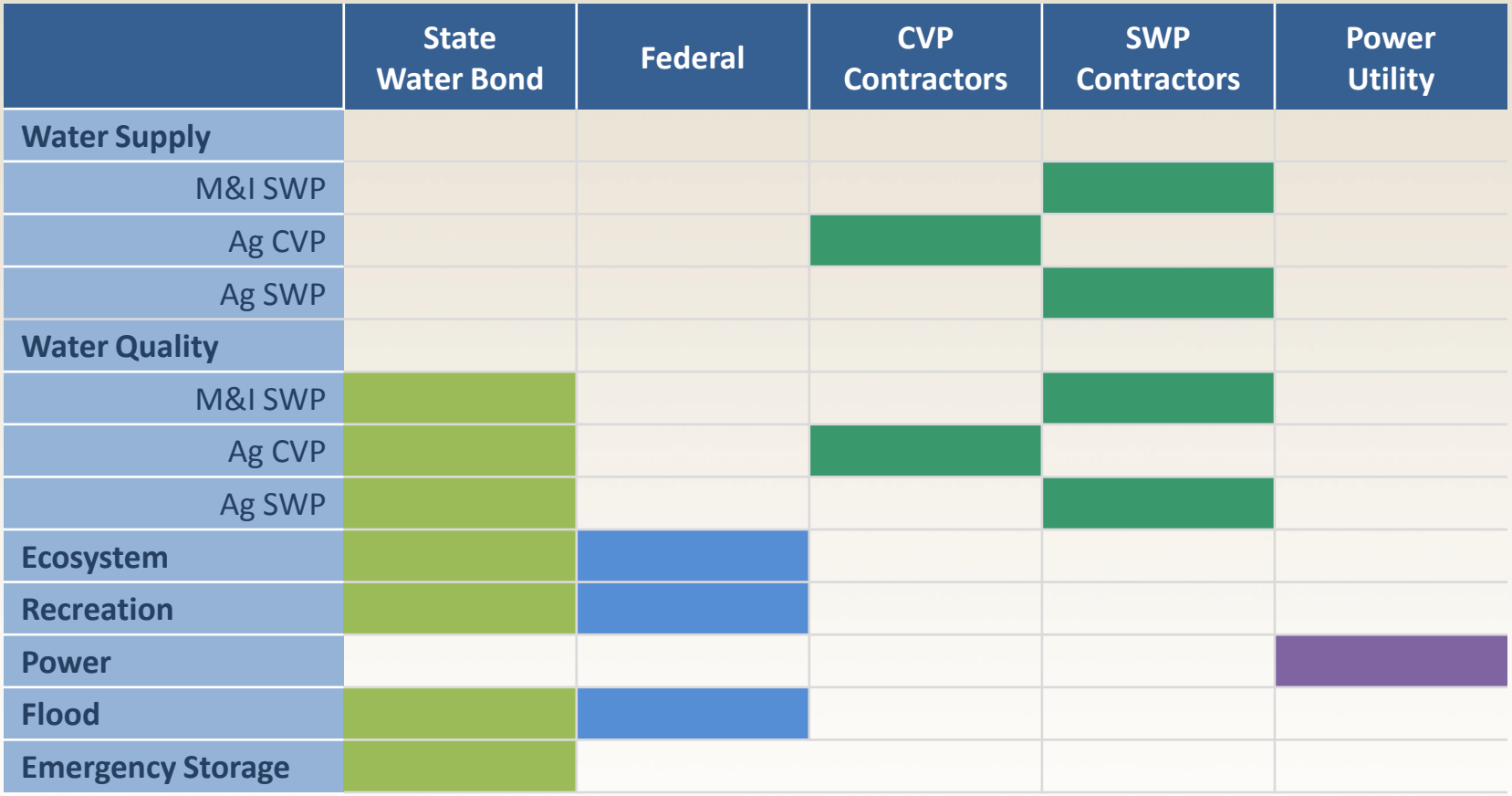
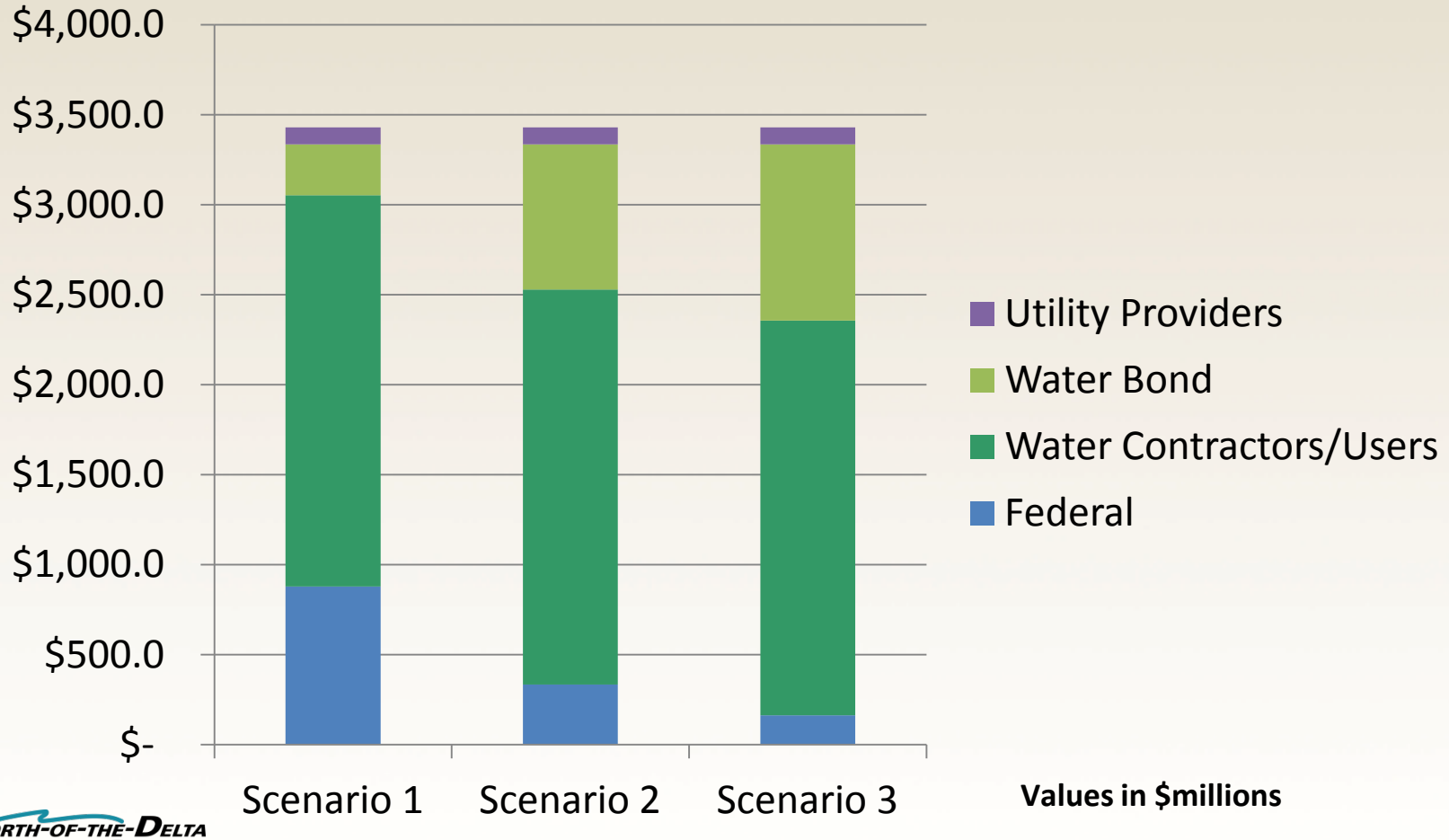
Potential Funding Partners



	State Water Bond	Federal	CVP Contractors	SWP Contractors	Power Utility
Water Supply					
M&I SWP					
Ag CVP					
Ag SWP					
Water Quality					
M&I SWP					
Ag CVP					
Ag SWP					
Ecosystem					
Recreation					
Power					
Flood					
Emergency Storage					

Estimated Construction Cost Assignment by Cost Share Partner



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Purpose

Sites Joint Powers Authority

Sites Joint Powers Authority (JPA)

- Authorized under Section Water Code 79749(a).
  - The purpose of JPA is to establish a public entity to design, acquire, manage and operate Sites Reservoir and related facilities to improve the operation of the state's water system and provide improvements in ecosystem and water quality conditions the Sacramento River system and in the Bay-Delta as well as provide flood control and other benefits for the State of California.
- Senate (Feinstein) also proposing similar language in current Appropriations Bill

JPA Members

- Glenn County
- Colusa County
- Glenn-Colusa Irrigation District
- Tehama Colusa Canal Authority
- Reclamation District 108
- Maxwell Irrigation District
- Yolo County Flood Control and Water Conservation District
- DWR – no voting member

2013 Actions and Engagement

- Conduct Public Outreach and Information
- Address Affordability & Funding Options
- Identify Beneficiaries and Cost/Benefit Evaluation
- Project Construction Cost Evaluation

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Conduct Public Outreach and Information

- Cooperating with DWR and Center for Collaborative Policy
- Focused Outreach to Stakeholders
  - Landowners - Project Footprint
  - Counties – Road relocation, bridge, Recreation Areas
  - Sac Valley Region – Districts, Counties, IWRMP's
  - NGO's – aquatic and terrestrial goals
- JPA not limited by state/federal pre-decisional concerns
- Outreach could true-up EIR/EIS to improve formal public review process and comments

Address Affordability

- Financial Feasibility vs. Affordability
- Economics (benefits to costs) vs. Repayment (is there a customer base)
- Pooled Benefits and Repayment or value discounting?
- How will the public share be funded?
  - Water Bond, capital or annual payments?
  - Valuing Public Benefits, are or science?
- How will the non-public share be funded + terms?
  - Federal Authorization and Budget
  - WIFIA
  - Equity/Bond Market

Identify beneficiaries and cost/benefit evaluation

- "What will I get, and what will it cost me?"
- How do I finance my share? Local bonding or Project bonding?
- How does Sites perform without and with BDCP?
  - Without BDCP, operations provide dry and critical year water supply.
  - With BDCP, could meet new outflow requirements and water supply reliability
- How do we value reoperation benefits?
- JPA developing a financial modeling tool to evaluate different funding and payment scenarios

Project Construction Cost evaluation

- Conducting a new capital cost study for Sites - current costs indexed for inflation
- Cost of Construction at $972M and 12 years -need to expedite construction schedule, timing of capital purchases

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Project Websites:

www.storage.water.ca.gov/northdelta/index.cfm
www.usbr.gov/mp/nodos/index.html

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