



CALIFORNIA  
**ECO RESTORE**  
A STRONGER DELTA ECOSYSTEM.

HANDOUT  
JAN 26 2016  
Item 2.2-A



# PROGRAM OVERVIEW

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2016



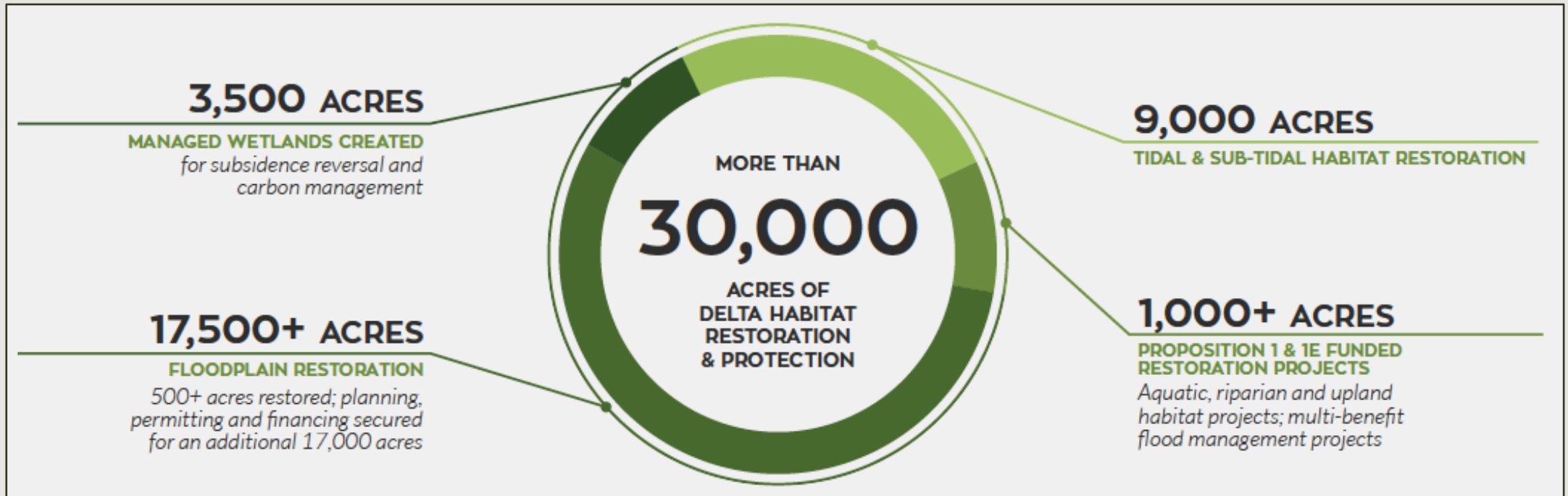
## CALIFORNIA ECORESTORE

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- **RESTORATION PROJECTS:** Program will accelerate the implementation of a comprehensive suite of habitat restoration actions in the Sacramento – San Joaquin Delta and Suisun Marsh
- **PLANNING:** Delta Conservancy will develop restoration plans for sub-regions of the Delta
- **MONITORING AND ADAPTIVE MANAGEMENT:** Development of a landscape Adaptive Management process to maximize effectiveness of restoration projects.



# RESTORATION PROJECTS





## ADDITIONAL PROJECTS

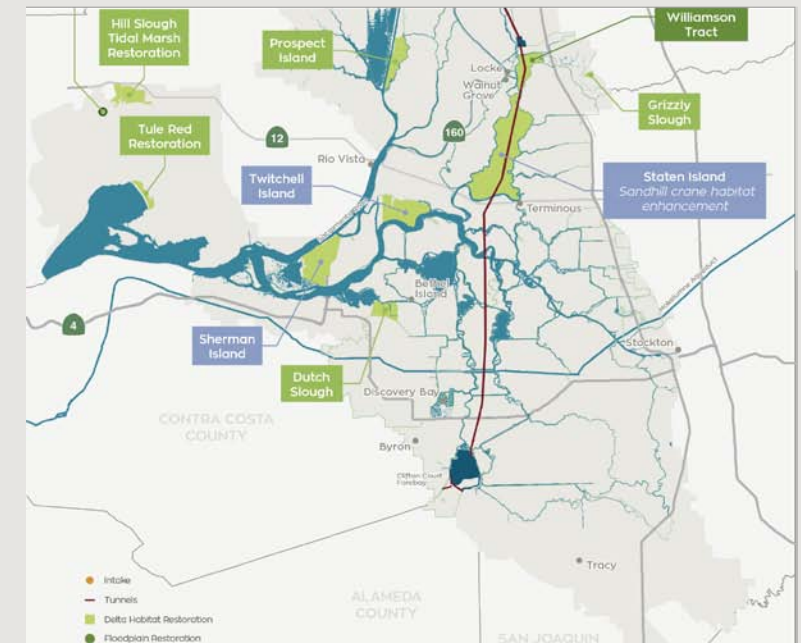
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- Fish passage in the Yolo Bypass
  - Block off Colusa Basin Drain
  - Agricultural Crossings
  - Fremont Weir Fish Ladder
- Shaded Riparian Habitat
  - Measured in lineal feet of habitat



# RESTORATION PROJECTS BREAKING GROUND IN 2015/2016

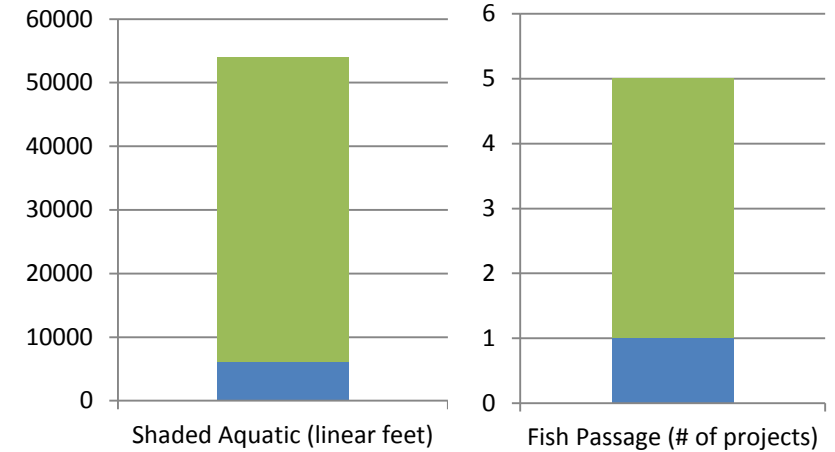
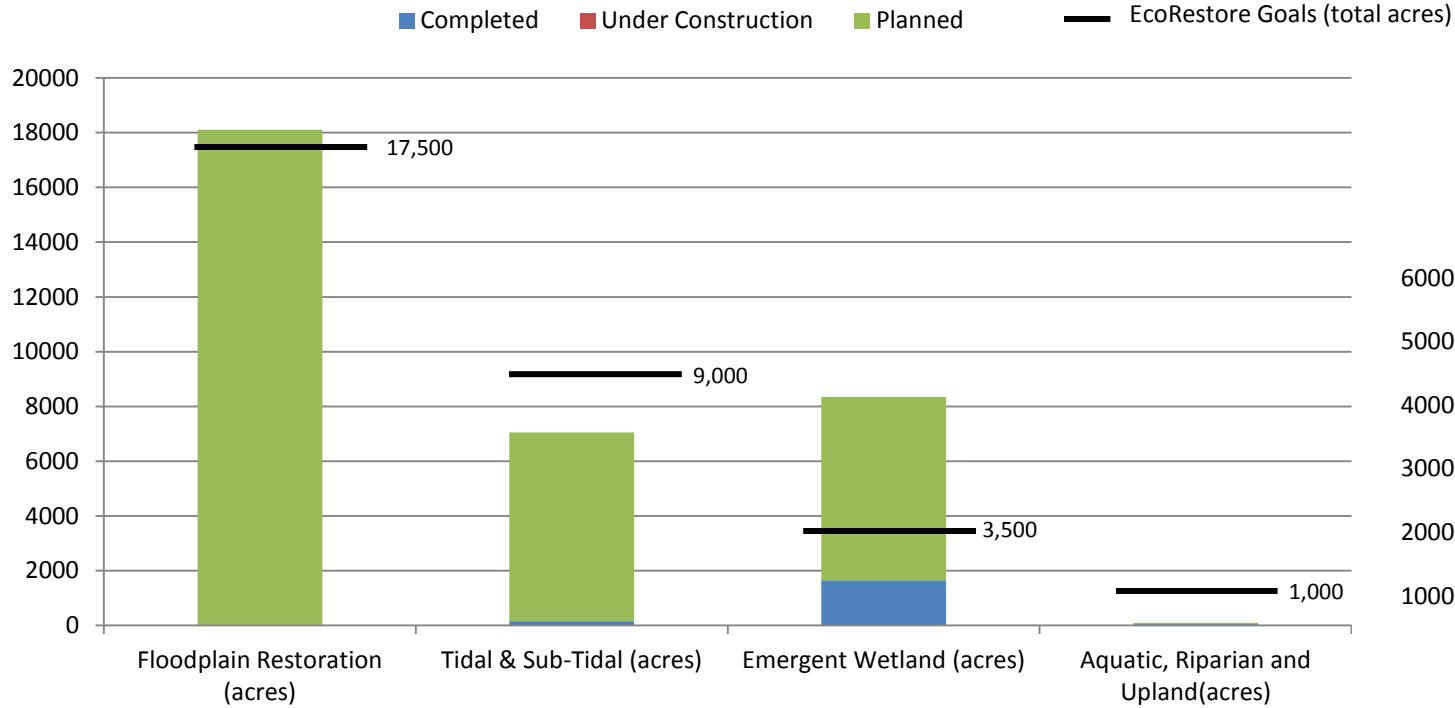
- 2015:
  - Sherman Island Whale's Mouth Wetland Restoration
  - Knights Landing Outfall Gates
- 2016 (Planned):
  - Wallace Weir
  - Hill Slough
  - McCormick Williamson Tract and Dutch Slough
  - Request for Proposal Projects



# EcoRestore Goals

*Progress Update (version 11.01.15)*

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## FUNDING FOR RESTORATION PROJECTS

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- Provided through multiple sources:
  - Floodplain and tidal/sub-tidal habitat restoration mandated by existing regulatory requirements (Biological Opinions) will be funded by state and federal water contractors
  - Wetlands restored for subsidence reversal and carbon management will be supported by the AB 32 Greenhouse Gas Reduction Fund and other sources
  - Various aquatic, riparian, and upland restoration and multi-benefit flood management projects will be supported by Proposition 1 & 1E
  - Additional projects will be supported by various local and federal partners



## ADAPTIVE MANAGEMENT

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- Delta Independent Science Board recommends an Adaptive Management program for the Delta
- How well do habitat projects improve the environment?
- Adaptive Management Cycle: Monitoring – Synthesis – Decisions – Monitoring – etc.
- Well established monitoring programs exist
- Need to Develop Institutional and Financial Structure for Adaptive Management





## RESTORATION PROJECT PLANNING

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- **Delta Conservancy** assigned to develop restoration plans for regions of the Delta
- Suisun Marsh Habitat, Management, Preservation and Restoration Plan already exists
- North East Delta Pilot Project
- Cache Slough Complex
- Other regions later
- Medium and long term planning – current projects to be implemented



## STAY INVOLVED

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<http://resources.ca.gov/ecorestore/>

 @CAEcoRestore

 California EcoRestore



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CALIFORNIA  
**WATER FIX**  
RELIABLE. CLEAN. WATER.

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# PROJECT OVERVIEW

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2016



## PROPOSED ALTERNATIVE 4A/CALIFORNIA WATERFIX

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- New sub alternative proposed by State and Federal agencies.
- Replaces Alternative 4 (BDCP) as the CEQA and NEPA preferred project.
- Separates conveyance facility and habitat restoration measures into two separate efforts – California WaterFix and California EcoRestore.
- Reflection of public comments.
- Fulfills requirements of 2009 Delta Reform Act to meet co-equal goals.
- Compliance with ESA through Section 7 consultation and CESA through 2081b incidental take permit.
- Analyzed in the Partially Recirculated Draft EIR/Supplemental Draft EIS, available for public review and comment: July 10<sup>th</sup> – October 30<sup>th</sup>.



# PERMITTING APPROACH

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- BDCP
  - Habitat Conservation Plan under Section 10 of the U.S. Endangered Species Act.
  - Natural Community Conservation Plan under the California Natural Community Conservation Planning Act.
  - Covers wide range of species over a large landscape.
  - Commitments and assurances for a specific term.
- California WaterFix
  - Compliance with the U.S. Endangered Species Act through Section 7 consultation (Biological Opinion).
  - Compliance with the California Endangered Species Act through a 2081b incidental take permit.
  - Permits do not include long-term assurances.
  - Ability to change or amend permits and adaptively manage.



# PROTECTING CALIFORNIA'S WATER SUPPLIES

- The existing system is outdated, inefficient and in need of repair.
- Without fixes to our water supply infrastructure, the Delta and the state's economy face threats.

1

## CLIMATE CHANGE



- **Sea levels continue to rise**, putting pressure on aging levees, some protecting islands more than 20 feet below sea level.
- With warmer average temperatures expected, more intense storms and floods are likely, **increasing pressure on dirt levees**.

2

## SEISMIC RISK



- Five active fault lines and many more inactive **fault lines pose a threat to our existing water delivery system**.
- A major earthquake or storm could cause flooding on as many as 20 islands at once and **jeopardize statewide water supplies**.

3

## ENVIRONMENTAL DECLINE



- Existing operations cause **reverse river flows**, trap and kill migrating salmon, and have contributed to a severe decline in delta smelt.



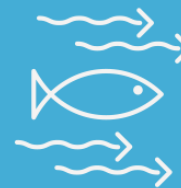
## STATE-OF-THE-ART SOLUTION

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- Prudent, science-driven, achievable
- Protect economy and public safety
- Project covers five main areas:
  - Water security
  - Climate change adaptation
  - Environmental protection
  - Seismic safety
  - Affordability



Protect our state's water supplies from climate change through water system upgrades



Improve river flows for threatened fish species

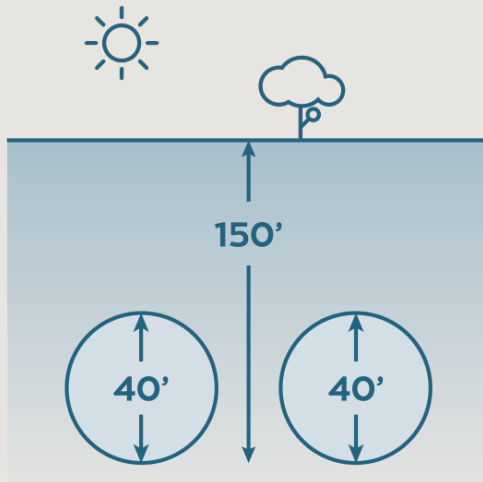


Ecosystem restoration and protection

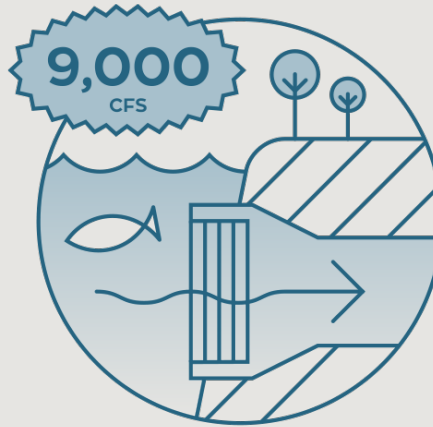




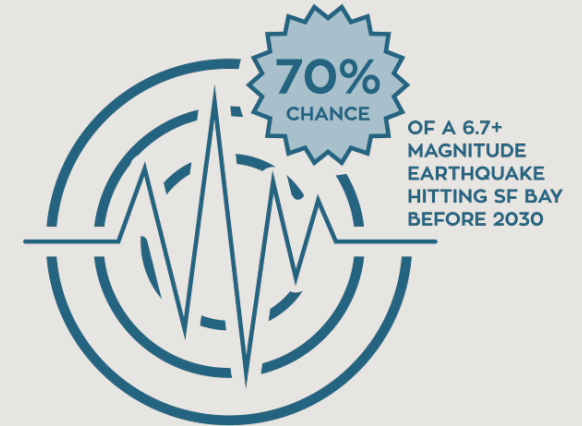
# WATER DELIVERY UPGRADE



2 tunnels up to 150' below ground designed to protect California's water supplies



3 new intakes, each with 3,000 cubic-feet per second (cfs) capacity. **Average annual yield of 4.9 million acre-feet.**

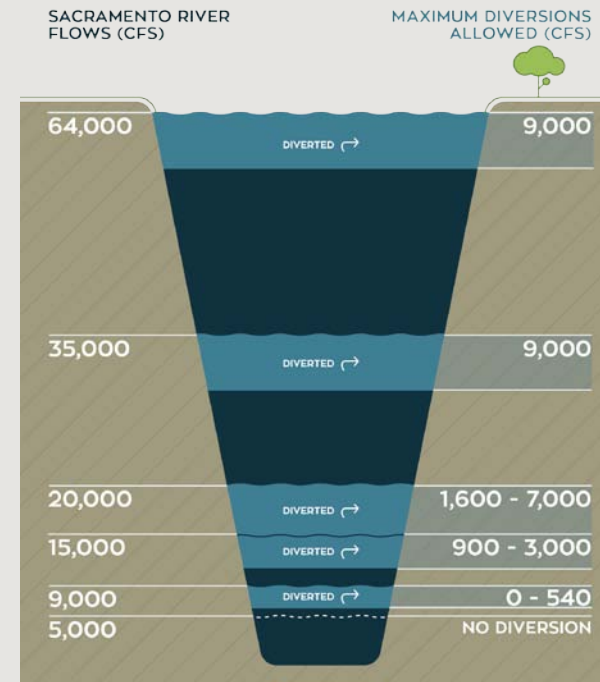
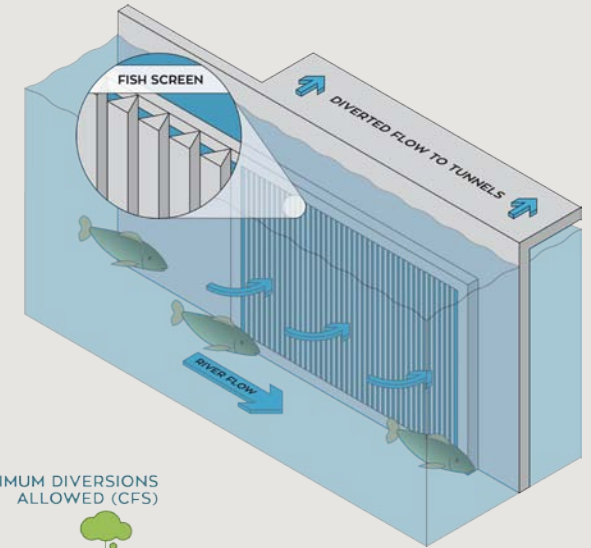


Protection against water supply disruption from failure of aging levees due to sea-level rise, earthquakes and flood events



## PROTECTING FISH

- A new water conveyance system can improve environmental flows over and above current conditions:
  - New criteria to protect spring outflow to San Francisco Bay
  - Improve flexibility to avoid water diversions at locations that harm fish
  - More natural direction of South Delta flows
  - Protect fish with state-of-the-art fish screens
  - Protect Sacramento River flows



*\*Depending on water year type and fish presence*  
*\*\*9,000 cfs is the maximum diversion allowed, starting when the river is at 35,000 cfs.*

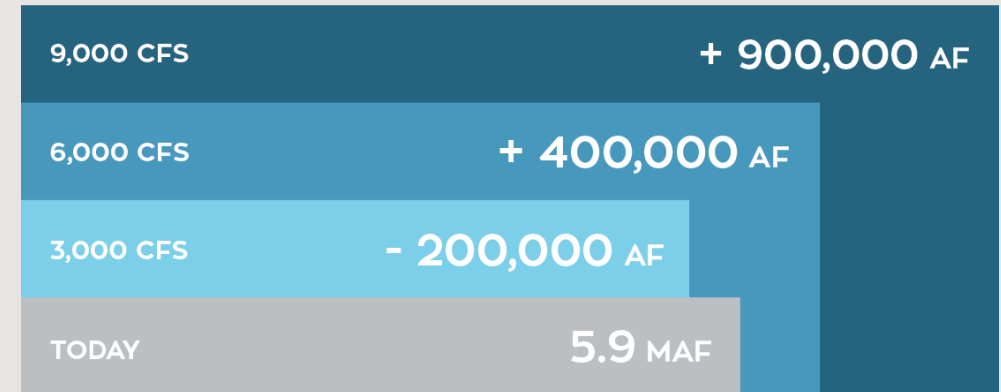


# PROPOSED FACILITY SIZE & YIELD

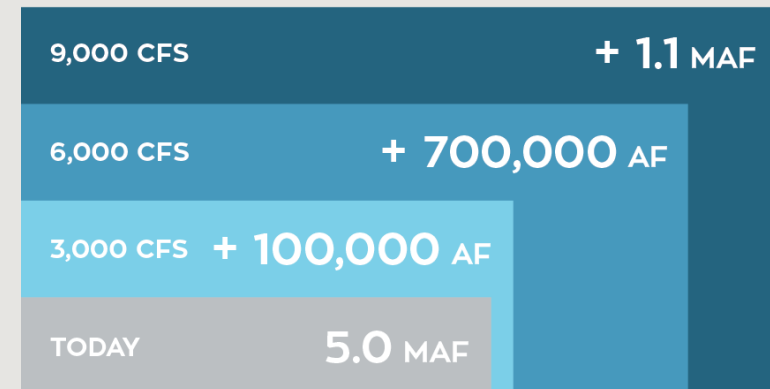
A 9,000 CFS FACILITY WOULD PROVIDE AN AVERAGE  
ANNUAL YIELD OF 4.9 MILLION ACRE-FEET

- Proposed 9,000 cfs facility is the best option for:
  - Reducing reverse flows and minimizing the trapping of migrating fish
  - Enhancing the ability to store surplus outflows and reduce diversions during critical fish migration periods
  - Improve drinking water quality
  - Expand groundwater recharge and recycling
  - Protect against water outages

## WET YEAR



## ABOVE-NORMAL YEAR



*The yields depicted account for climate change, which is expected to cause more intense storms and flood events.*



# ENVIRONMENTAL MITIGATION



Improve habitat conditions along five miles of important juvenile salmon migration routes



Restore tidal and non-tidal wetland habitat to sustain habitat functions for native wildlife, such as the Giant Garter Snake and salmon



Restore native riparian forest and scrub to support habitat for riverside species and improve linkages for terrestrial and other native species



Improve connectivity among existing patches of grassland and other natural habitats



## AFFORDABILITY

- Estimated project cost is \$14.9 billion – or about \$5 a month for urban water users.
- Paid for by public water agencies that rely on the supplies.



An Adaptive Management and Monitoring Program will guide real-time operations of the system.



Our communities — farms, businesses, homes — and economy depend upon reliable, affordable, high-quality water supplies.



The time to act is now. Californians cannot afford a broken and unreliable water delivery system.



## PROPOSED ENGINEERING IMPROVEMENTS

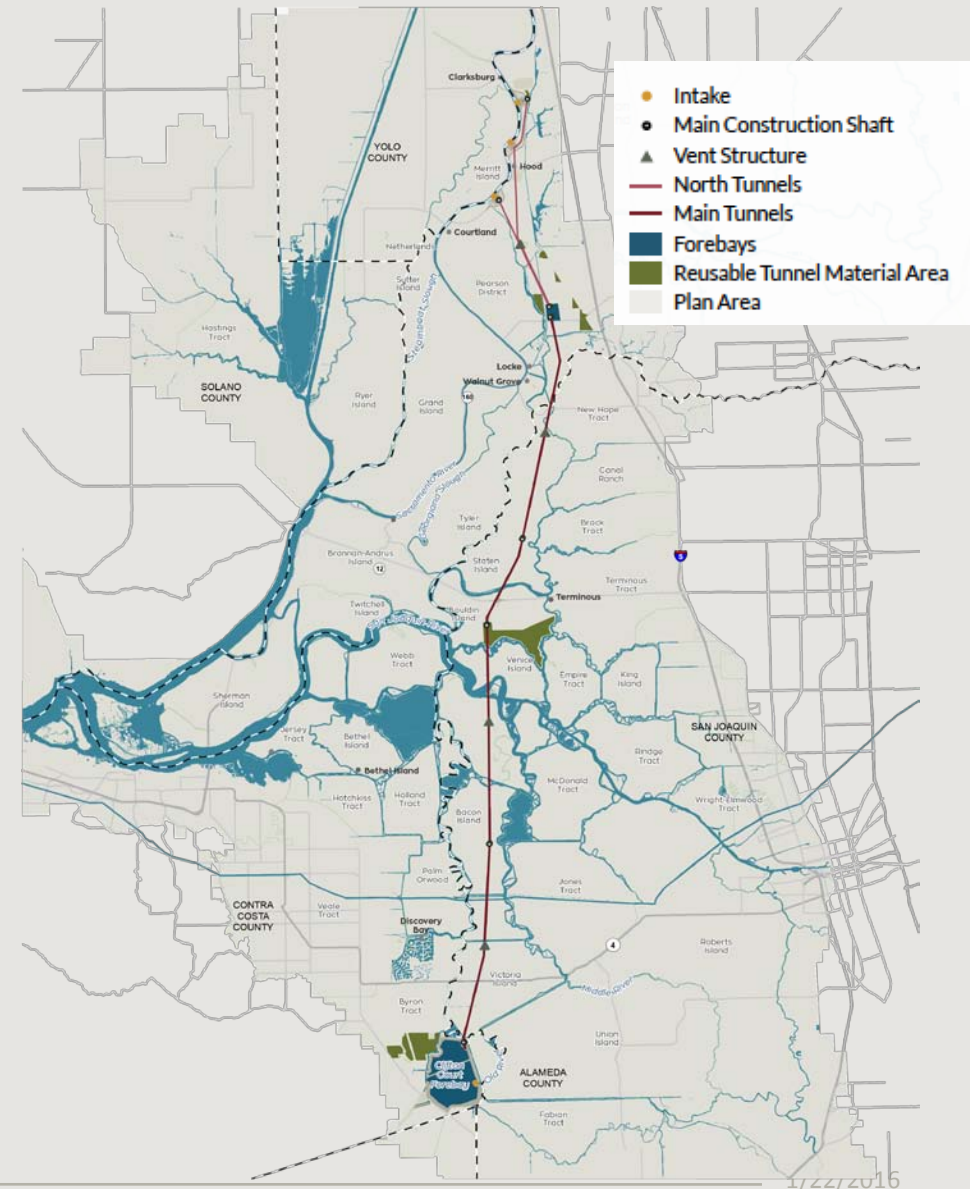
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- Response to public comments
  - Reduce visual impacts at pumping plants
  - Permanent power lines near Stone Lakes
  - RTM construction and duration of impacts at Staten Island
  - Construction impacts at Italian Slough
  - Increased use of DWR owned property



# PROPOSED REFINED TUNNEL OPTION AND INTAKE DESIGN

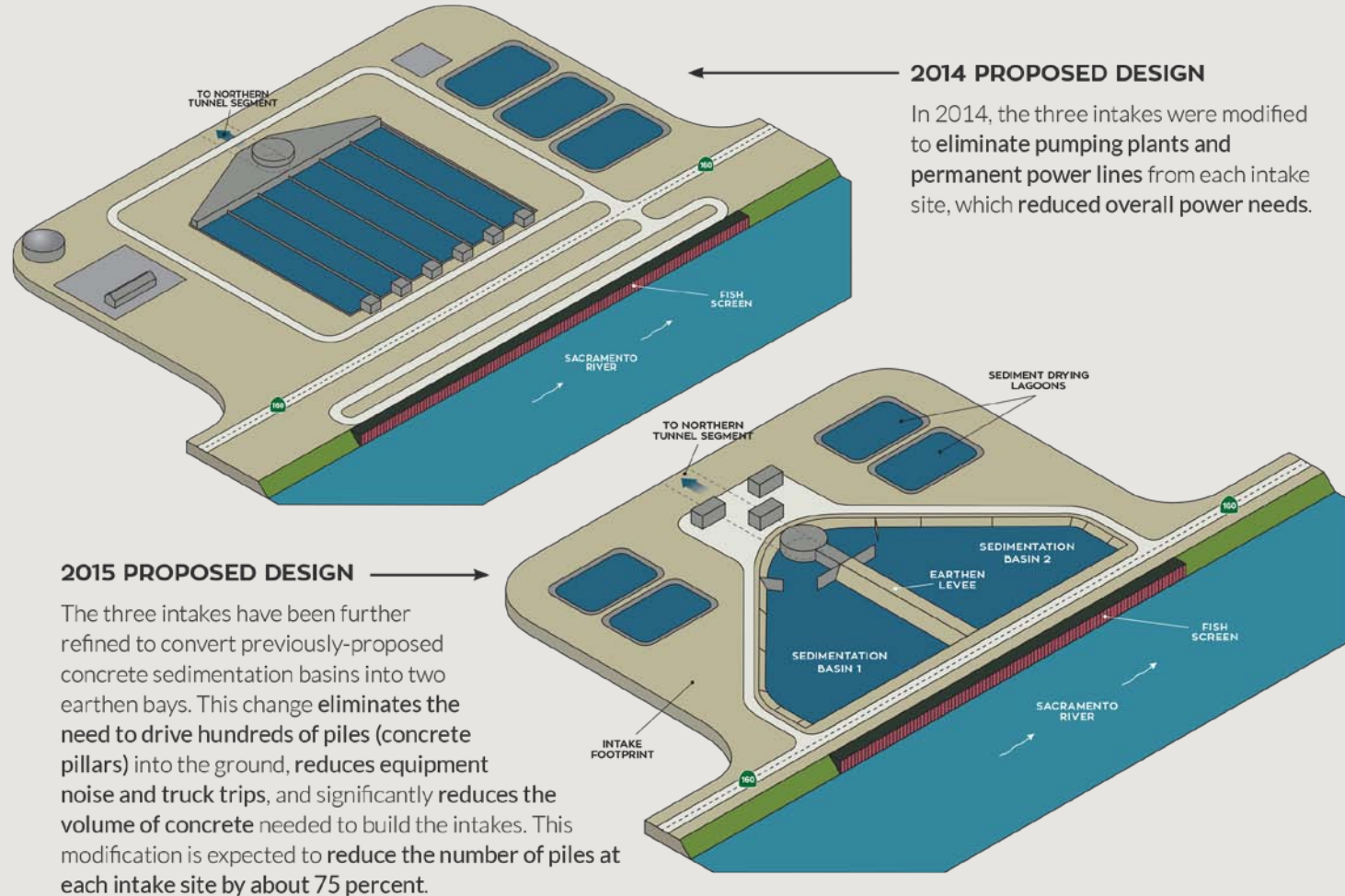
- Environmental Benefits:
  - Eliminate several features at northern intakes
  - Reduce visual impacts near Hood
  - Remove permanent transmission lines near Stone Lakes National Wildlife Refuge
  - Reduce impacts and overall construction on Staten Island
  - Eliminate large access pads at vent structures
  - Eliminate environmental impacts on Italian Slough
- Operational Benefits:
  - Gravity-fed operation – improves tunnel operation, reduces power requirements and improves long-term reliability
  - Combined pumping facility on existing state-owned property at Clifton Court – reduces environmental and construction impacts







# PROPOSED ENGINEERING CHANGES TO INTAKE FACILITIES







## PROJECT IMPROVEMENTS

Project Refinements	Administrative Draft EIR / EIS	2013 Project Refinements	2014 Project Refinements
Water Facility Footprint	± 3,654 acres	± 1,851 acres	± 1,810 acres
Intermediate Forebay Size (Surface Acreage)	± 750 acres	± 40 acres	± 28 acres
Private Property Impacts - Permanent and Temporary	± 5,965 acres	± 5,557 acres	± 4,288 acres
Public Lands Utilized	± 240 acres	± 657 acres	± 733 acres
Number of Tunnel Reaches	6	5	5
Number of Launch and Retrieval Shaft Locations	7 main tunnel shafts	5 main tunnel shafts	5 main tunnel shafts
Agricultural Impacts	± 6,105 acres	± 6,033 acres	± 4,890 acres



## STAY INVOLVED

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[www.californiawaterfix.com](http://www.californiawaterfix.com)

 @CAWaterFix / @CAEcoRestore

 California WaterFix / California EcoRestore



# QUESTIONS

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