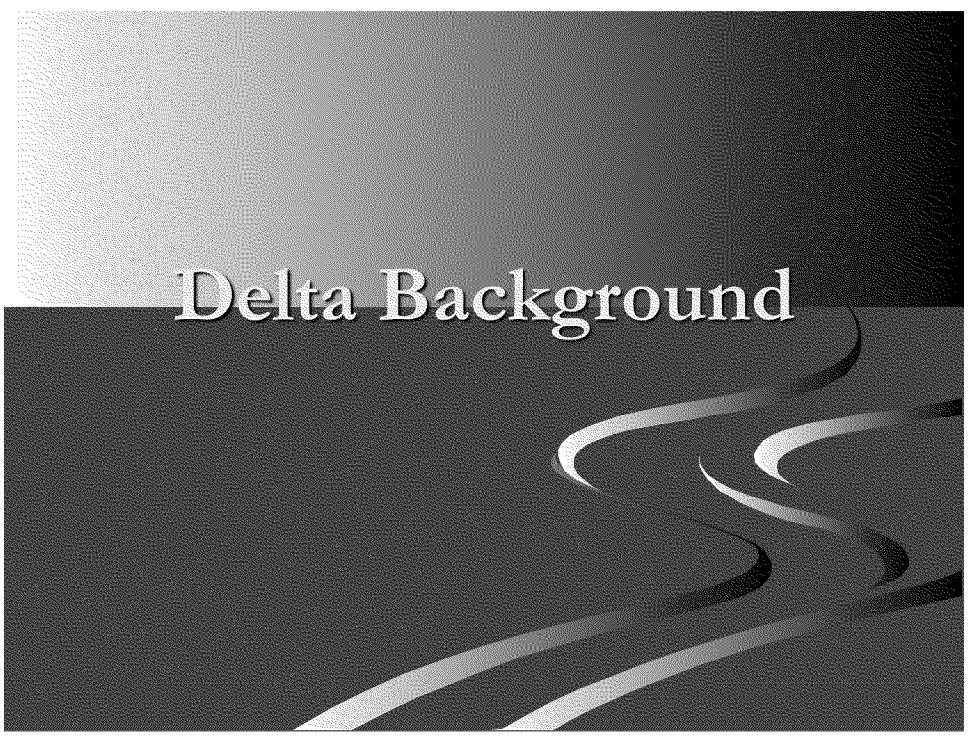
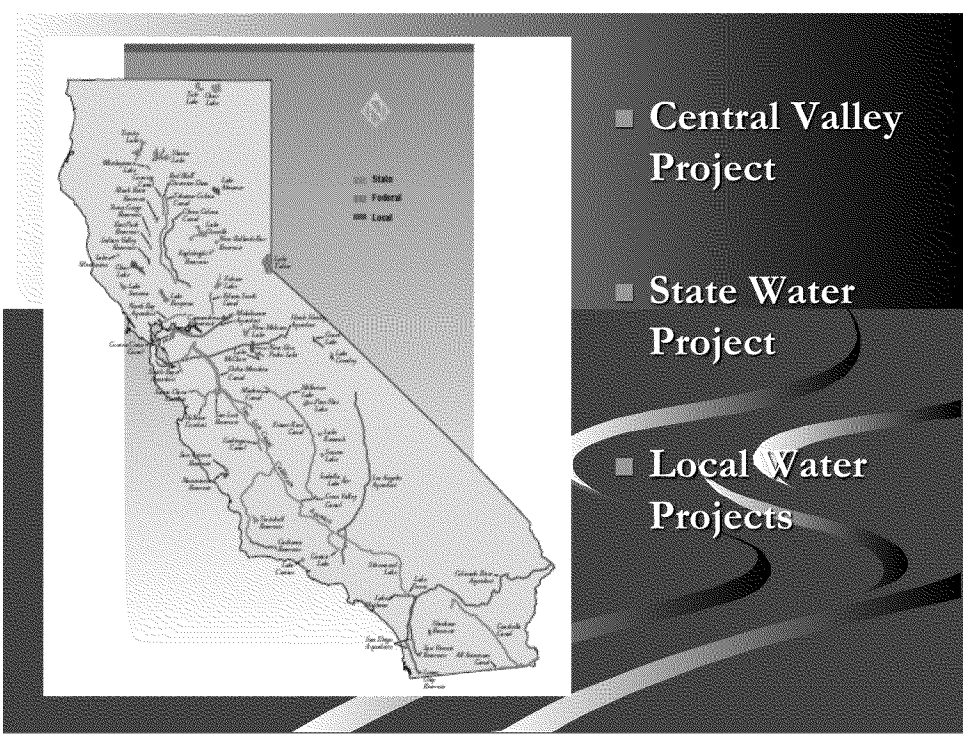


ED_000733_DD_NSF_00085374-00001

California Water
Where it comes from
The Delta
Mean annual precipitation in inches


State
Federal
Local
Central Valley Project
State Water Project
Local Water Projects

Importance of the Delta to California

Water Supply

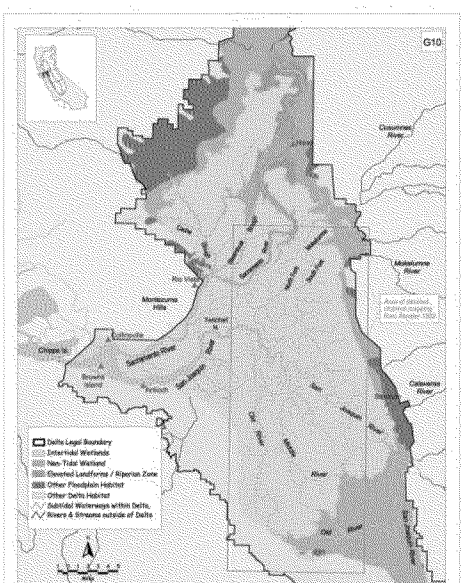
- 25 million Californians
- 3 million acres of agriculture
- $400 billion of annual economic activity

In-Delta Land Use

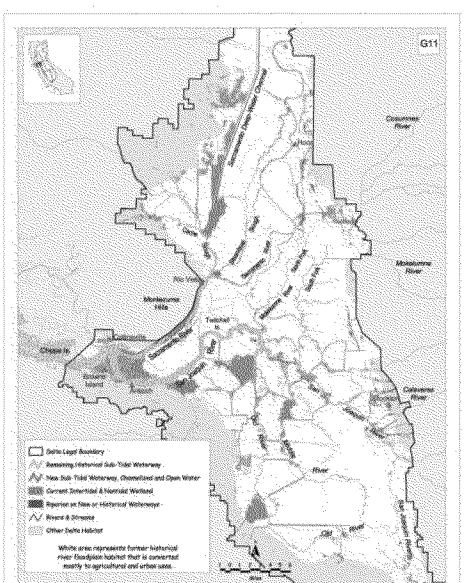
- 558,000 acres in agricultural production
- 64,000 acres of urban and commercial development

Environment

- Confluence of California's two largest watersheds (Sacramento River and San Joaquin River)
- More than 750 plant and animal species
- More than 40 threatened or endangered species



The Delta Historical Aquatic Ecosystem



The Delta Current Ecosystem

Source: The Bay Institute (1998)

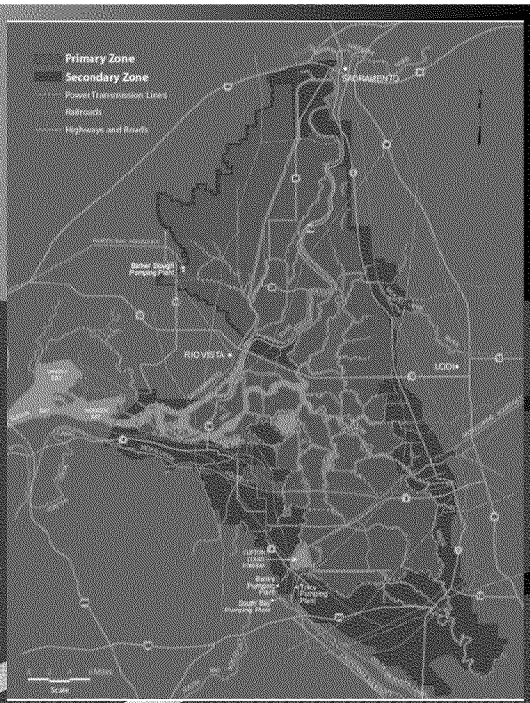
The Legal Delta:

738,000 acres

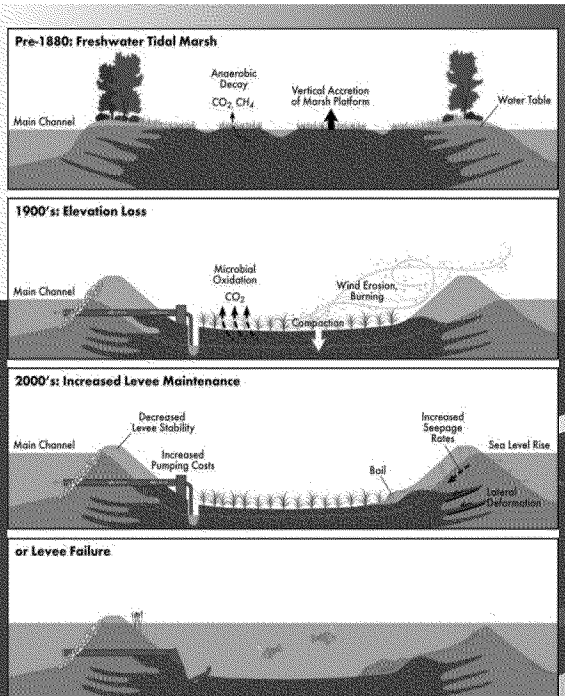
~ 60 islands/tracts

1,115 miles of levees

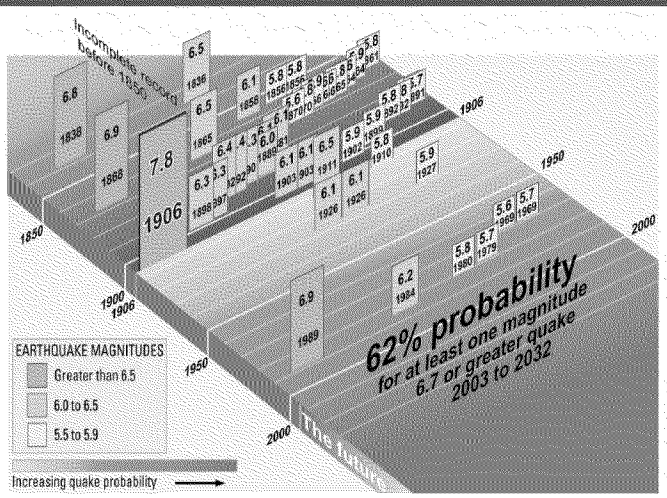
- 3 State Highways
- Major Rail Lines
- Major Water and Natural Gas Pipelines
- 1 Critical Natural Gas Reservoir
- 2 Deep Water Ports
- Major Power Transmission Lines



Delta Land Subsidence



Bay Area Historical Seismicity



Source: WGCEP, 2003

URS

Transition to the 21st Century Delta

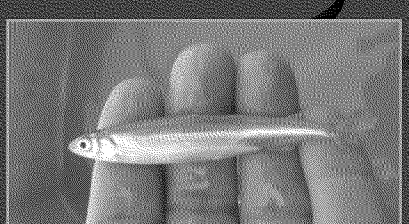
- A **new** Delta shaped by
  - Sea Level Rise
  - Subsidence
  - Changing Inflows
  - Seismicity
  - Economic Capacity
  - New Invasive Species

History of California Water

- Gold Rush 1849
- CVP Authorized 1933
- SWP Bond 1960
- Peripheral Canal – 1982 ballot measure defeated
- CVPIA 1992
- Bay Delta Accord 1995
- CALFED ROD 2000
- **BDCP begun in 2006**
- Delta Vision 2007
- State Delta Legislation 2009

1990 vs. 2010

- 8 to 10 million new residents
- Shift from row crops to permanent crops
- More stringent water quality standards
- Fish species continue decline
- New Biological Opinions
- Reduced flexibility in water operations



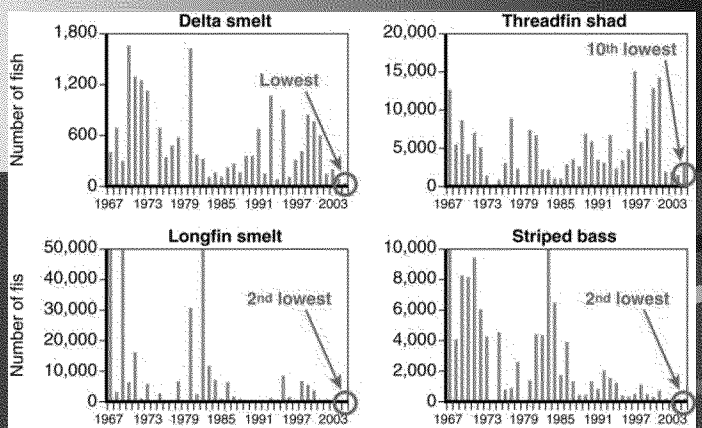
CALFED and BDCP

- The CALFED Bay Delta Program was developed by state and federal partners to address a broad range of actions.
- The BDCP is a Habitat Conservation Plan conducted under ESA and is primarily an applicant driven process.

Species Challenges

- Pelagic Organism Decline
- Central Valley Salmon Decline

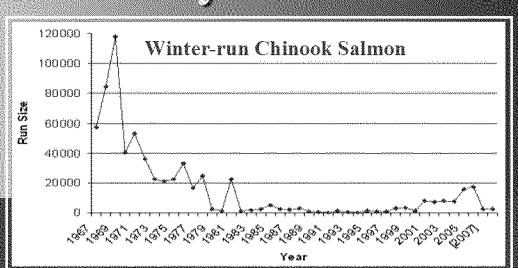
Pelagic Organism Decline

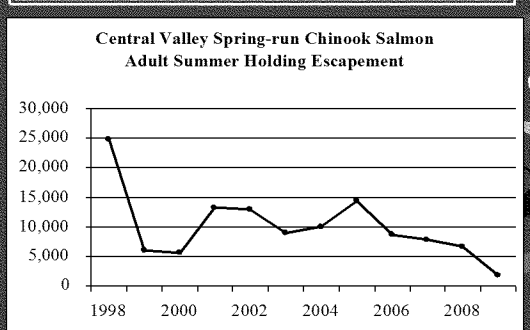


SOURCE: California Department of Fish and Game.

NOTES: Graphs report the indices for the fall midwater trawl. Circles indicate the rank of indices in 2005. For delta smelt, longfin smelt, and striped bass, the recent indices represent low points in long-term declines of their populations.

Central Valley Salmon Decline





Consultation Cycle

- First BiOp for winter-run Chinook 1992
- First delta smelt BiOp in 1995
- CVP/SWP BiOps 2004/2005
- Remanded by District Court 2007/2008
- CVP/SWP BiOps 2008/2009
- Continued Litigation

Bay Delta Conservation Plan

Importance to Long-term Solution

Comprehensive ecosystem approach provides best opportunities to recover fisheries and assure water supplies

Better separates water delivery system from the Delta estuary

Restores tens of thousands of acres of tidal marsh and flood plain habitat

Improves Delta flows through greater operational flexibility

Considers the many other stressors impacting fish populations – predation, invasive species, pesticides, toxins

Provides a framework to implement the plan over time

Bay Delta Conservation Plan

- Initiated in 2006
- Co-equal goals of more reliable water supply and restore Delta ecosystem
  - Habitat Conservation Plan
  - Natural Community Conservation Plan
- Ongoing preparation of a joint EIR/EIS

BDCP Covered Activities

- Incidental take associated with near and long term water operations
- Construction of new facilities to allow for more environmentally benign long term water operations
- Implementation of mitigation and conservation actions

Parties and Roles

- Steering Committee
- Regulatory/Approving Agencies
- NEPA and CEQA Leads
- Cooperating Agencies
- Other Interests

BDCP Steering Committee

Federal and State Agencies

- California Department of Water Resources
- California Resources Agency
- State Water Resources Control Board
- Bureau of Reclamation
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- California Department of Fish & Game
- National Marine Fisheries Service

Non-Governmental Organizations

- American Rivers
- Defenders of Wildlife
- Environmental Defense Fund
- Natural Heritage Institute
- The Bay Institute
- The Nature Conservancy
- California Farm Bureau Federation

Water Agencies

- Santa Clara Valley Water District
- Kern County Water Agency
- Metropolitan Water District of Southern California
- San Luis & Delta Mendota Water Authority
- Westlands Water District
- Zone 7 Water Agency
- Contra Costa Water District
- Friant Water Users
- Mirant Energy

NEPA / CEQA Lead Agencies

- USFWS
- Reclamation
- NOAA Fisheries
- DWR

Cooperating / Responsible Agencies

- USACE
- EPA
- Water Users JPA
- SWRCB
- DFG
- Delta Stewardship Council

Other Interests

- Delta Counties
- Levee Districts
- Conservation Districts
- In-Delta Water Districts
- Land Owners
- Fishing Interests

BDCP Goal - Issuance of Permits

- **Endangered Species Act §10(a)(1)(B)**
  - Issuance of a permit to non-federal entities for take of federally listed species, based on the development of an adequate HCP
  - Permits would be issued by both USFWS and NMFS
- **California Natural Community Conservation Planning Act**
  - Issuance of a permit to non-federal entities for take of state listed species, based on the development of an adequate Natural Community Conservation Plan (NCCP)
  - Permit would be issued by the California Department of Fish and Game (DFG)

BDCP – Non-Federal Entity Coverage under ESA

- Take Authorization Provided by §10 Permit
- No Prohibition on Issuance of a §10 Permit Notwithstanding the Existence of a Related Discretionary Federal Action
- Provides "No Surprises" Assurances to Permittee
  - No obligation for additional resources in event of changed or unforeseen circumstances without consent of permitee
- Permit may be suspended or revoked if continued actions under the permit would jeopardize listed species

BDCP – Federal Agency Coverage under ESA

- **Consultation Under §7(a)(2) of the ESA**
  - Results in Issuance of a Biological Opinion (BiOp) with Incidental Take Statement (ITS)
  - Federal Agencies Do Not Receive "No Surprises" Assurances
- Most or All Covered Activities Have Associated Discretionary Federal Action, Independent of HCP and §10 permit

BDCP Discretionary Federal Actions

- **USBR** long term operation and maintenance of the Central Valley Project
- **USFWS and NMFS** must engage in intra-service §7 consultation for §10 permit
- **USACE** for permits under River and Harbor Act §§10 and 14 and CWA §404
- **USEPA**, potentially, for ratification of any changes in the Water Quality Control Plan for the Bay-Delta that the State Water Resources Control Board may make in response to the BDCP
- **FEMA**, potentially for changes in 100-year flood plain associated with new conveyance facility

BDCP – Other HCP/NCCP Considerations

- **Near Term CVP/SWP Operations**
  - Resolution of description complicated by ongoing litigation
- **Long Term CVP/SWP Operations**

  Resolution complicated by:
  - Lack of decision on applicant preferred form of conveyance
  - New state statutory requirement to evaluate reduced reliance on the Delta
- **Fifty Year Permit Term**
  - Challenges related to Changed Circumstances and Unforeseen Circumstances
  - Challenges related to developing defensible biological opinion
  - Robust Engagement in Adaptive Management Program and compliance monitoring by Services

BDCP Outline

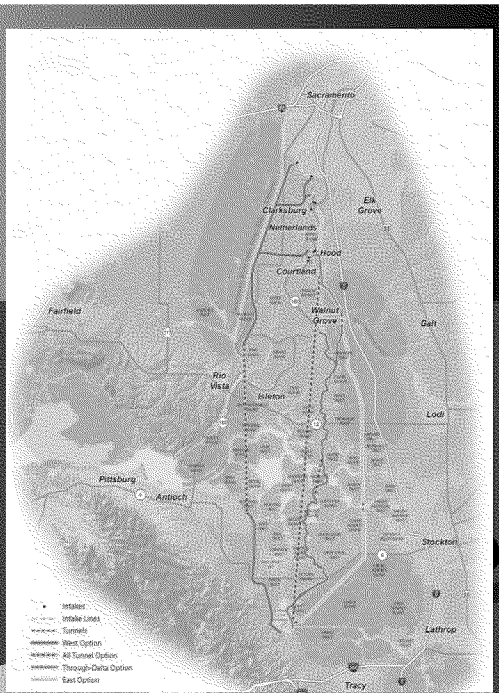
Chapter 1. Introduction
Chapter 2. Existing Ecological Conditions
Chapter 3. Conservation Strategy
Chapter 4. Description of Covered Activities
Chapter 5. Assessment of Impacts and Level of Take
Chapter 6. Plan Implementation
Chapter 7. Implementation Structure
Chapter 8. Implementation Costs and Funding Sources
Chapter 9. Alternatives Considered and Rejected
Chapter 10. Independent Science Advisory Process
Chapter 11. List of Preparers
Chapter 12. References
Appendices

3.1 Introduction
3.2 Biological Goals and Objectives
3.3 Approach to Conservation: Overview of Key Conservation Measures and Their Integration
3.4 Conservation Measures
3.5 Monitoring Plan
3.6 Adaptive Management Program
3.7 Summary of the Approach to Minimization and Mitigation of Effects
3.8 Summary of Expected Outcomes for Covered Species and Natural Communities

Conservation Measures

- Conveyance/Operations
- Habitat Restoration
  - Tidal Marsh
  - Floodplain Inundation
  - Channel Margin Habitat
- Other Stressors (limited authority to address)

- Water Conveyance Alternatives
- Habitat Restoration Areas



Role of Science

- NAS/NRC Committee on the Delta
- Delta Science Program
- Delta Stewardship Council's Independent Science Board
- Interior/Commerce Task Force Effort
  - Near-term Science Strategy
  - Integrated BDCP BiOp Strategy

Process for Completing – Timeline

- Draft BDCP in November 2010
- Public Draft EIS/EIR in 2011
- Biological Assessment / Biological Opinions in 2012
- ROD, Permit Issuance in 2012
- Begin Implementation in 2012
- Complete Conveyance in 2020 (est.)

2009 State Legislation

- Delta Stewardship Council
  - Early actions
  - Delta Plan (to consider BDCP)
- Delta Conservancy
  - Identified federal role
- Requirements for BDCP
- State Bond Initiative in November 2010

2010 Water Bond: $11.4B

- Drought Relief - $455M
- Water Supply Reliability (12 regions)- $1.4B
- Delta Sustainability - $2.2B
- Water System Improvement (Storage) - $3.0B
- Conservation and Watershed Protection - $1.79B
- Groundwater Management - $1.0 B
- Recycling and Conservation -$1.25B

Challenges

Near-term Water Operations

- Near Term - Period from issuance of permits to operation of the conveyance facility.
- Options:
  - (1) Include in the BDCP (Section 7 and 10)
  - (2) Address through Section 7 only
- Current requirements of the existing BiOps would continue unless new actions or new science provides a basis for modifying.

Role of the Federal Government

- Governance Structure
  - Program Implementation
  - Habitat Restoration
  - Water Operations
    - Inter-agency Annual Review
    - Real-time Operations
- Funding Structure
- Implementing Authorities of Federal Agencies (USACE, FWS, NMFS, Reclamation)
- Conveyance Ownership vs. Wheeling Agreement

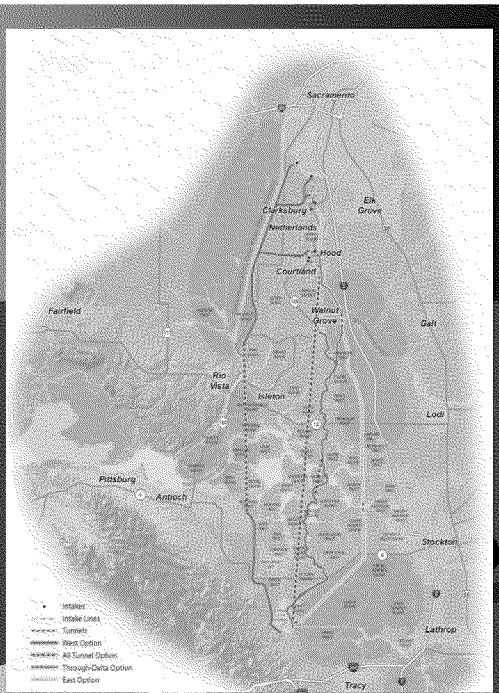
Managing Expectations

- Action-based/Outcome-based Strategy
- Adaptive Management and Monitoring
- Changed Circumstances, Unforeseen Circumstances
- Section 10 Assurances
- Approach to Other Stressors

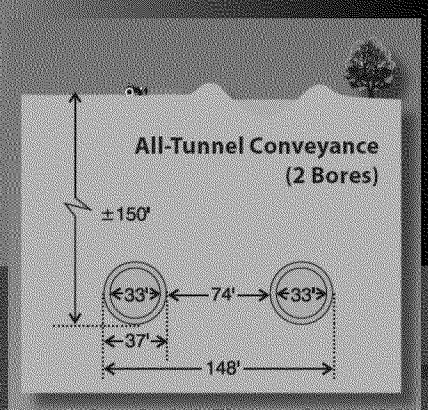
Conveyance Alternatives

- Array of Potential Alternatives
- Capacity and Phasing
- Analysis of Effects

- Water Conveyance Alternatives



Potential Delta Water Conveyance Options



What's a Tunnel Boring Machine?

M-30 By-Pass Sur Túnel Norte, Madrid EPB Shield – 15.200 m diameter

Next Steps

- Multiple Fronts
  - NAS Reviews
    - Interior/Commerce Task Force
    - Inter-agency Annual Review
    - On-going Litigation
- Further Progress