Bay–Delta Conservation Plan: Governance

Special Meeting
Imported Water Committee
February 13, 2014

Glenn Farrel
Government Relations Manager
Today’s Agenda

- BDCP Update
- Three key points about BDCP governance:
  1. Substantially different institutional arrangement than exists today
  2. Centralized government structure to undertake implementation of program
  3. Significant authority and deference granted to water exporters’ interests
- Next Steps
BDCP Update

- Public draft of BDCP and EIR/EIS released December 13, 2013
  - 120 day formal review period
  - Open House events held throughout the state – February 6 in San Diego
- Staff currently evaluating public draft and will discuss substantive changes with the Board in March
Objective: Provide Board with assessment of which proposal is most consistent with
  ◦ Board’s Bay–Delta Policy Principles
  ◦ Reliability and diversification goals in Water Authority’s 2010 UWMP

Water Authority has not endorsed a preferred Delta fix solution

Four options being evaluated
  1. BDCP preferred alternative (9,000 cfs)
  2. BDCP Plus (DVF) (6,000 cfs)
  3. Portfolio Alternative (NRDC) (3,000 cfs)
  4. No action (existing conveyance)
Water Authority Multi-Disciplinary Internal Review (cont.)

- Scope of review driven by BDCP timeline and available resources
- High-level review based on perspective of a recipient and purchaser of Delta exports
  - Review based on available published data with professional judgment
  - Not intended to recreate modeling results
- Deliverables:
  1. Comment letter through BDCP environmental review process
  2. Assessment of project reliability, financing, and impact on rates, including risk assessment for Board consideration
Key BDCP Governance Point #1: BDCP proposes a substantially different institutional arrangement than exists today.
Current Governance Structure
Proposed New BDCP Governance Structure

Figure 7-1
Organization of BDCP Implementation
Key BDCP Governance Point #2: BDCP proposes a centralized government structure to undertake implementation of program
Centerpiece of Proposed New BDCP Governance Structure

**IMPLEMENTATION OFFICE**

**Authorized Entity Group**
- DWR, Reclamation, Water Contractors

**Administration**
- Administrative Assistants
- Contracts Officers
- Clerks
- Budget Analysts
- Grant Writers/Administrators
- IT/Database
- GIS Specialists

**Habitat Restoration**
- Restoration Program Manager
- Restoration Project Managers
- Regulatory Specialist
- Technical Specialists

**Public Outreach**
- Outreach Program Manager
- Outreach Program Specialists

**Other Stressors Conservation Measures**
- Other Stressors Program Manager
- Other Stressors Project Manager
- Technical Specialists

**Land Acquisition**
- Land Acquisition Program Manager
- Land Acquisition Specialists

**Adaptive Management, Monitoring & Research**
- Staff Scientist
- Technical Specialists

**Water Facility Design & Construction**
- Water Facility Design & Construction Office

**Program Manager**
- Deputy Program Manager
- Program Counsel
- Science Manager

*Figure 7-2*
Staff Organization for BDCP Implementation Office
Implementation Office

- Newly-created *Implementation Office* would be led by a Program Manager – selected by, and reporting to, *Authorized Entity Group*
- Program Manager would ensure that BDCP is properly implemented throughout duration of project operations
- Program Manager will direct, oversee, and select staff for *Implementation Office*

*Implementation Office* would be responsible for
- Overseeing and coordinating administration of program funding
- Overseeing and implementing conservation measures
- Technical and logistical input to Adaptive Management Team
- Coordinating with Delta-wide governance entities
Key BDCP Governance Point #3: BDCP proposes that significant authority and deference granted to water exporters’ interests
Proposed New BDCP Governance Structure

Figure 7-1
Organization of BDCP Implementation
Authorized Entity Group

- Authorized Entity Group would be comprised of:
  - Director of DWR
  - Regional Director for USBR
  - Representative of participating state water contractors
  - Representative of participating federal water contractors

- Provide program oversight and general guidance to Implementation Office Program Manager

- Responsible to see management and implementation of BDCP carried out consistent with Implementing Agreement and regulatory permits

- Meet in public at least quarterly – BDCP documents silent on whether it is subject to California public meeting and public records laws
Authorized Entity Group Would Have Significant Role in BDCP Implementation

- *Authorized Entity Group* has primary role in BDCP decision-making process
  - Of 15 identified decision-making points, AEG makes the decision on 9

- Even for decisions where AEG is *not* identified as decision-making party, the new BDCP governance structure would grant significant deference to AEG
  - Of the 6 identified decision-making points where AEG does not make the decision, the AEG has a final authority to decide the matter on 4

- Two decisions where AEG has no direct decision-making role
  - Selection of Science Manager (made by Program Manager)
  - Real-time water operations changes (made by Regional Director of relevant federal agency)
Summary and Observations

- BDCP Public Review Draft proposes significant restructuring of institutional governance arrangements

- Governance model would be centralized around *Implementation Office*, which would be operated by a Program Manager – selected by, and reporting to, the water exporters’ interests (*Authorized Entity Group*)

  *Authorized Entity Group* would have substantial authority and would be granted significant deference in the BDCP implementation process

- Work remains to be done to ensure a reasonable checks-and-balances structure is in place
# BDCP Alternatives Review & Analysis: 2013 Activities

<table>
<thead>
<tr>
<th>Meeting</th>
<th>Imported Water Committee/Board Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/25/2013</td>
<td>Provide input on scope of proposed Water Authority analysis of BDCP alternatives; provide input on policy questions to be addressed</td>
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<tr>
<td>8/8/2013 Special Meeting</td>
<td>Overview of Bay–Delta and proposals for Delta fix, including description of alternatives</td>
</tr>
<tr>
<td>8/22/2013</td>
<td>Review of technical analysis – demand assumptions; alternative project yield assumptions; projected costs</td>
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<tr>
<td>9/12/2013 Special Meeting</td>
<td>BDCP economic study on cost–benefit of BDCP preferred alternative</td>
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<tr>
<td>9/26/2013</td>
<td>Review of technical analysis (cont.), including yield review</td>
</tr>
<tr>
<td>10/24/2013</td>
<td>Information: Review of technical analysis (cont.), including baselines; BDCP timeline and processes impacting implementation</td>
</tr>
<tr>
<td>11/14/2013 Special Meeting</td>
<td>Supply and demand evaluation and analysis</td>
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## BDCP Alternatives Review & Analysis: 2014 Activities

<table>
<thead>
<tr>
<th>Meeting</th>
<th>Imported Water Committee/Board Activity</th>
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<tbody>
<tr>
<td>1/9/2014 Special Meeting</td>
<td>Identification of BDCP Physical features and facilities; supply/demand risk assessment</td>
<td>✓</td>
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<tr>
<td>1/23/2014</td>
<td>Preliminary cost estimates and risk assessment to Water Authority</td>
<td>✓</td>
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</table>
| 2/13/2014 Special Meeting | BDCP governance  
Engineering assessment of BDCP cost estimates               |   |
| 2/27/2014       | Follow-up analysis of cost estimates and risk assessment to Water Authority                           |   |
| 3/13/2014 Special Meeting | Summary presentation of BDCP issues. Review of draft EIR/EIS comment letter                          |   |
| 3/27/2014       | Action: Consider action on final EIR/EIS comment letter                                                 |   |
| 4/24/2014       | Revise BDCP schedule; discuss outstanding policy issues; timeline for future board meetings          |   |
Bay Delta Conservation Plan – Infrastructure Review
February 13, 2014
Today’s Agenda

- Description of Proposed Facilities
- Review Process – Gate Process
- Construction Schedule
- Risk Areas
- Construction Estimate
- Greatest Risks and Impacts
Today’s Agenda

- Description of Proposed Facilities
- Review Process – Gate Process
- Construction Schedule
- Risk Areas
- Construction Estimate
- Greatest Risks and Impacts
Delta Fix Options

- BDCP Preferred Alternative: 9,000 cfs pipeline/tunnel
- No Action Alternative
- NRDC Portfolio Concept
- Delta Vision BDCP Plus Concept
Figure ES-2: Conveyance Schematic
BDCP Infrastructure

- 2 – 40 feet diameter 30 mile long tunnels between intermediate forebay and modified Clifton Court forebay
- 5 tunnel launch/retrieval shafts
- Clifton Court forebay split into 2, north and south forebays
BDCP Infrastructure

- 3– 3,000 cfs intakes off Sacramento River w/ sedimentation basins and pumping plants
- 3 – North tunnels 20/29 feet diameter, ~14 miles between pumping plants and intermediate forebay
- 1 – 40 acre intermediate forebay connected to main conveyance tunnels
Note:
Depending on site conditions, actual depths may vary from 61 to 160 ft msl.
The dimensions shown pertain to Alternative 4. Tunnels constructed for the other PTO alternatives would have an inside diameter of 33 feet and an outside diameter of 37 feet.
Adapted from: DWR 2010, Conceptual Engineering Report: All Tunnel Option, Figure 11-6, March 10, Sacramento, CA.
Segmented Tunnel Design
Today’s Agenda

- Description of Proposed Facilities
- Review Process – Gate Process
- Construction Schedule
- Risk Areas
- Construction Estimate
- Greatest Risks and Impacts
Lens of Review

- Water Authority Gate Process
- Risk Management Plan
- Potential impacts on project cost and schedule
Gate Process Deliverables

Gate 1 – Risk Management Plan

Identify
Analyze
Mitigate
Monitor
Update

Manage Risks During All Project Phases

Project Initiation and Design Phases
Other Large Publics Works Projects

- Channel Tunnel (United Kingdom/France)
- Alaska Way Viaduct (Seattle)
- Calaveras Dam (Bay Area)
- Panama Canal Expansion
- Bay Bridge
Today’s Agenda

- Description of Proposed Facilities
- Review Process – Gate Process
- Construction Schedule
- Risk Areas
- Construction Estimate
- Greatest Risks and Impacts
## Conceptual Engineering Report
### Appendix C – Construction Schedule

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Completion Date</th>
<th>Allowable Delay</th>
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<tbody>
<tr>
<td>Final EIR/EIS Complete</td>
<td>August 29, 2014</td>
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<tr>
<td>Notice to Proceed Construction</td>
<td>November 20, 2019</td>
<td>{0}</td>
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<tr>
<td>Pump Procurement Complete</td>
<td>July 18, 2022</td>
<td>{681}</td>
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<tr>
<td>TBM Procurement Finished</td>
<td>September 13, 2023</td>
<td>{387}</td>
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<tr>
<td>Finish Installing Permanent Power</td>
<td>January 17, 2024</td>
<td>{0}</td>
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<tr>
<td>Intermediate Forebay Complete</td>
<td>June 9, 2027</td>
<td>{641}</td>
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<tr>
<td>Intake Pumping Plants Finished</td>
<td>November 1, 2027</td>
<td>{540}</td>
</tr>
<tr>
<td>Main Conveyance Tunnels Complete</td>
<td>July 15, 2028</td>
<td>{382}</td>
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<tr>
<td>Main Tunnel Startup and Commissioning Finished</td>
<td>December 22, 2028</td>
<td>{0}</td>
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**Table ES- 3: Projected Construction Schedule for MPTO Facility Components**

<table>
<thead>
<tr>
<th>Facility Component</th>
<th>Start Date</th>
<th>Durations (Days)</th>
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<tbody>
<tr>
<td></td>
<td>Month</td>
<td>Year^a</td>
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<tr>
<td><strong>Procurement</strong></td>
<td></td>
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<tr>
<td>Intake Pumps</td>
<td>November</td>
<td>Year 1</td>
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<tr>
<td>Tunnel Boring Machines (TBM)</td>
<td>April</td>
<td>Year 3</td>
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<tr>
<td><strong>Construction</strong></td>
<td></td>
<td></td>
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<tr>
<td>Site Prep, Roads, Barges, Utilities</td>
<td>August</td>
<td>Year 1</td>
</tr>
<tr>
<td>Temporary Power</td>
<td>May</td>
<td>Year 1</td>
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<tr>
<td>Intakes</td>
<td>February</td>
<td>Year 5</td>
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<tr>
<td>Intake Pumping Plants</td>
<td>June</td>
<td>Year 5</td>
</tr>
<tr>
<td>Pipelines and Transitions</td>
<td>November</td>
<td>Year 9</td>
</tr>
<tr>
<td>Intake Tunnels</td>
<td>December</td>
<td>Year 4</td>
</tr>
<tr>
<td>Intermediate Forebay^c,^d</td>
<td>November</td>
<td>Year 3</td>
</tr>
<tr>
<td>Main Conveyance Tunnels</td>
<td>November</td>
<td>Year 3</td>
</tr>
<tr>
<td>North and South Clifton Court Forebays</td>
<td>December</td>
<td>Year 2</td>
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<tr>
<td>Permanent Power</td>
<td>December</td>
<td>Year 4</td>
</tr>
<tr>
<td><strong>Start Up Commissioning</strong></td>
<td>April</td>
<td>Year 9</td>
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</tbody>
</table>

^a Year 1 is currently representing 2017

^b Some duration include float days since some activities relies on the completion of others.
Today’s Agenda

- Description of Proposed Facilities
- Review Process – Gate Process
- Construction Schedule
- Risk Areas
- Construction Estimate
- Greatest Risks and Impacts
Property Acquisition

- Property acquisition plan
- Condemnation considerations
- Appraisal process
- Securing rights of entry or up front work
Tunnel Methodology

- Excavated material removal
- Excavated material disposal
- Ventilation system design
- Tunnel boring machines
Power Requirements

- Temporary power
  - Locations for power delivery
  - Power needs
  - Electrical infrastructure design and construction

- Permanent power
  - Assess existing transmission system for possible system upgrades
  - Look at system reliability
Access and Utility Conflicts

- Utilities
- SR-12 and SR-160 highway relocations
- Natural gas wells
Geotechnical Issues

- Existing work accomplished
- Ground conditions
- Groundwater
- Borings
Geotechnical Borings

- Historical Data – Collected from other Delta area projects such as levees and highways

- 2009–2012 Field Explorations – borings, cone penetration tests, geophysical surveys, and laboratory testing

- Identifying soils types, hardness, groundwater elevations, cobbles …
Drill Rig Coring
Project Delivery Method

- Design Bid Build versus Design Build
- Bonding ability
- Labor requirements
- Project labor agreements
Available Resources

- Tunnel boring machines
- Steel liners
- Borrow material
- Specialized contractors
- Technical experts
- Competing projects
Today’s Agenda

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Estimated Construction Cost Elements

- River Intake Structures
- Forebays & flow control structures
- Tunnels and pipelines
- Controls and communications
- Utilities and power delivery
- Contingency ~ 36 percent
## Tunnel Options Construction Costs

<table>
<thead>
<tr>
<th>Estimated Costs</th>
<th>3,000 cfs</th>
<th>6,000 cfs</th>
<th>BDCP Proposed 9,000 cfs</th>
<th>15,000 cfs</th>
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<tbody>
<tr>
<td>Construction</td>
<td>$9.4B</td>
<td>$11.4B</td>
<td>$12.4B</td>
<td>$14.5B</td>
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<td>Engineering, project/construction management</td>
<td>$1.4B</td>
<td>$1.7B</td>
<td>$1.9B (~15%)</td>
<td>$2.3B</td>
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<tr>
<td>Total</td>
<td>$10.8B</td>
<td>$13.1B</td>
<td>$14.3B</td>
<td>$16.8B</td>
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</tbody>
</table>

**Notes:**
1. BDCP revised cost of single bore tunnel is $8.6B per November 12, 2013 web post.
2. Costs are stated in 2012 dollars.

**Source:** BDCP, Table 9.B–6, November 2013
Cost Estimate Key Facts

- Contingency @ 36 percent
- Soft Costs @ 15 percent
- Direct Construction Costs Expected Accuracy Range +50% to −25%
  - Results in Range of $11.2 to $20.6 billion
Today’s Agenda

- Description of Proposed Facilities
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Summary of Greatest Risks

- Unknown subsurface conditions
- Alternate project delivery methods
- Property acquisition
- Resource timing
Impacts

- Add contingency and time to schedule
- Manage Risk (e.g. use risk register)
Looking Forward

- Review Updated Engineering Conceptual Design Report – Complete
- Engineering Assessment of BDCP Costs Estimates – February 2014
- Comment Letter – April 2014