Bay Delta Conservation Plan
– Infrastructure Review
January 9, 2014
Introduction

- Status of BDCP Design
- Role of Water Authority Review
- Schedule
<table>
<thead>
<tr>
<th>Month</th>
<th>Topics</th>
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<td>Board Review Process</td>
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<td>Background &amp; Options to Review</td>
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<td>November</td>
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Today’s Agenda

- Description of Proposed Facilities
- Cost Estimates
- Review Process – Gate Process
- Initial List of Concerns
Today’s Agenda

- Description of Proposed Facilities
- Cost Estimates
- Review Process – Gate Process
- Initial List of Concerns
Delta Habitat Conservation and Conveyance Program (DHCCP)

October 1, 2013

Final Draft Version

Conceptual Engineering Report

Modified Pipeline / Tunnel Option
Volume 1 – Conceptual Engineering Report

DHCCP: Program
Preliminary Not for Construction
Figure 9-1
Geomorphologic Provinces of California

Source: Based on California Department of Conservation, California Geological Survey, Note 36, page 1, 2002.
Figure ES-1: Location of Facilities
Figure ES-2: Conveyance Schematic
Delta Fix Options Reviewed

- **BDCP Preferred Alternative**: 9,000 cfs pipeline/tunnel
- No Action Alternative
- NRDC Portfolio Concept
- Delta Vision BDCP Plus Concept
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
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
- Relocation of roads and utilities
- Temporary and permanent power
BDCP Infrastructure

- Tunnel and forebay muck disposal
- Approximately 15 years from preliminary engineering to start-up
Figure 3-20
Tunnel Configuration

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.
Agenda

- Description of Proposed Facilities
- Cost Estimates
- Review Process – Gate Process
- Initial List of Concerns
## Tunnel Options Construction Costs

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

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

* Based on May 2013 BDCP, Appendix 9.B – needs updating per revised costs.
Other Cost Estimate Factors

- Project Management
- Engineering Design Costs
- Construction Administration
- Currently 15% included for these items
Agenda

- Description of Proposed Facilities
- Cost Estimates
- Review Process – Gate Process
- Initial List of Concerns
Capital Improvement Project Delivery

- Gate Process
- What is a “Gate”?
- Gate Group Composition
Gate Process

Planning
- Gate 1: Project Initiation (20 deliverables)

Design
- Gate 2: Design Initiation (10 deliverables)
- Gate 3: Preliminary Design (6 deliverables)
- Gate 4: Mid-Point Design (6 deliverables)
- Gate 5: Final Design (12 deliverables)

Construction
- Gate 6: Beneficial Occupancy (5 deliverables)
- Gate 7: Approval - Go to Board for NOC (9 deliverables)

Post-Construction
- Gate 8: Project Closeout (15 deliverables)
Gate Process

Planning
- Gate 1: Project Initiation (20 deliverables)

Design
- Gate 2: Design Initiation (10 deliverables)
- Gate 3: Preliminary Design (6 deliverables)
- Gate 4: Mid-Point Design (6 deliverables)
- Gate 5: Final Design (12 deliverables)

Construction
- Gate 6: Beneficial Occupancy (5 deliverables)
- Gate 7: Approval - Go to Board for NOC (9 deliverables)

Post-Construction
- Gate 8: Project Closeout (15 deliverables)
Gate Process Deliverables

Gate 1 – Project Initiation:
- Planning Study Final Report
- Project Delivery Plan
- Preliminary Project Schedule
- Project Budget
- Risk Management Plan
- Public Outreach Consultant Support
- Value Engineering Study for Pipeline Projects
Gate Process Deliverables

Gate 1 – Project Initiation:
- Planning Study Final Report
- **Project Delivery Plan**
- Preliminary Project Schedule
- Project Budget
- Risk Management Plan
- Public Outreach Consultant Support
- Value Engineering Study for Pipeline Projects
Gate Process Deliverables

- Project Delivery Plan
  - Team members
  - Project objectives
  - Schedule milestones
  - Budget
- Key Issues
- Stakeholder coordination
- Anticipated Board actions
Gate Process Deliverables

- Project delivery plan that examines and explores various options to execute the project.

Examples:
- Design/Bid/Build
- Design/Build
- Design/Build/Operate
- Pre-purchase of equipment
- Staged construction
Gate Process Deliverables

- Project scope
- Schedule
- Desired level of owner involvement
- Tolerance for risk
- Resources and capabilities
Gate Process Deliverables

Gate 1 – Risk Management Plan

- Identify
- Analyze
- Mitigate
- Monitor
- Update

Manage Risks During All Project Phases

Project Initiation and Design Phases
Gate Process Key Deliverables

Gate 2 – Deliverables:

- Life Cycle Cost Analysis
- Preliminary Design Report
- Draft Environmental Impact Report
- Right-of-Way Acquisition Plan
Gate Process Key Deliverables

Gate 3 – Preliminary Design:
- Updated Construction Cost Estimate
- Adopted Final Environmental Impact Report
- Updated Project Delivery Plan
Construction Review Process

- Review Documents
  - BDCP
  - EIR/EIS
  - Conceptual Engineering Report
  - Geotechnical Data Report

- Examine through lens of Water Authority Gate Process
Agenda

- Description of Proposed Facilities
- Cost Estimates
- Review Process – Gate Process
- Initial List of Concerns
Risk Considerations

- Tunnel Muck Removal
  - Electric Car, fuel driven cars, conveyors

- Tunnel Muck Disposal
  - Where?, alternate uses?

- Ventilation Design
Other Construction Risks

- Project delivery method
- Construction contract requirements
  - Bonding, owner controlled insurance, project labor agreement, local labor
- Ability to get 10–11 Tunnel Boring Machines and operators
- Temporary Power – project generation air quality
Other Construction Risks

- Permanent Power – multiple power providers – system control
- Unknown if enough suitable borrow material
- Natural gas wells – existing and abandoned
- Infiltrated Water Removal
Other Construction Risks

- Relocation of roads and utilities
- Price escalation beyond estimates for 15-year project
- Dewatering intermediate shaft sites
- Geotechnical
  - Unknown subsurface conditions
  - Harder/softer ground
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 ...
Other Tunnel Projects

- Channel Tunnel (United Kingdom/France)
- Alaska Way Viaduct (Seattle)
Looking Forward

- Review Updated Engineering Conceptual Design Report – Ongoing
- Engineering Assessment of BDCP Costs Estimates – February 2014
- Comment Letter – April 2014
Special Meeting of the Imported Water Committee

January 9, 2014

Presented by:
Ken Weinberg, Director of Water Resources
Dana Friehauf, Principal Water Resource Specialist

Bay–Delta Conservation Plan (BDCP):

Supply and Demand Risk Assessment

Sacramento-San Joaquin Delta
Today’s Agenda

- BDCP update
- Summary of previous SWP supply reliability analyses
- Risk assessment
  - Permitting
  - Schedule
  - Implementation
  - Supply
  - Demand
- Summary/Observations
BDCP Update

- Public draft of BDCP and EIR/EIS released December 13, 2013
  - 120 day formal review period
  - Public meeting scheduled for February 6, 2014 in San Diego at the Convention Center, 3 pm–7pm
- Staff evaluating public draft and will discuss substantive changes with the Board in February
  - Projected export yields are consistent with administrative draft documents
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
The guiding statement is that:

“The Water Authority Board of Directors supports a Bay–Delta solution that will meet the co–equal goals and provide San Diego County with a reliable, high–quality supply of affordable, imported water consistent with the Water Authority’s Urban Water Management Plan and Regional Facilities Optimization and Master Plan.”
Summary of Previous SWP Supply Reliability Analyses
Two Major Elements that Influence Delta Export Yields

Conservation Measures 1: Water Facilities and Operations
**BDCP Alternatives – Estimated Average Export Yields under High Outflow Scenario**

**Average Annual Exports**
- **Early Long-Term (2025)**

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Average Annual Exports (MAF)</th>
<th>South Delta</th>
<th>North Delta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposed Action</td>
<td>4.7</td>
<td>2.4</td>
<td>2.3</td>
</tr>
<tr>
<td>9,000 cfs</td>
<td></td>
<td>51%</td>
<td>49%</td>
</tr>
<tr>
<td>6,000 cfs Alt</td>
<td>4.4</td>
<td>2.6</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>59%</td>
<td>41%</td>
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<tr>
<td>3,000 cfs Alt</td>
<td>4.2</td>
<td>3.0</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>72%</td>
<td>28%</td>
</tr>
<tr>
<td>Existing Conveyance</td>
<td>3.4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Source:** BDCP Chapter 9, Table 9–3
Summary: Comparison of Estimated Export Yields

- From in-Delta *only* perspective, 9,000cfs Delta option provides the most SWP yield on average.

- The greater the amount of north Delta diversions the greater the improvement in SWP water quality:
  - Lower salinity and organics.

- Greater reliance on south Delta diversion creates more risk:
  - Increasing restrictions to protect fish species cause uncertainty over export yields.
  - Uncertainty regarding reliability during levee failure, other catastrophic events.
Addresses one of Board’s Policy Principles that the Delta solution should:

“Improve the ability of water-users to divert water from the Delta during wet periods, when impacts on fish ecosystem are lower and water quality is higher”

From the perspective of best managing shortage risk
- Inability to model MWD system puts and takes to storage
- Evaluated volume and frequency of wet-year SWP deliveries for puts into storage
## Estimated Frequency of 1.5 MAF of SWP Deliveries to MWD: “Big Gulp”

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Frequency</th>
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</thead>
<tbody>
<tr>
<td>Proposed Action (9,000 cfs)</td>
<td>30% (3 out of 10 years)</td>
</tr>
<tr>
<td>6,000 cfs</td>
<td>20% (2 out of 10 years)</td>
</tr>
<tr>
<td>3,000 cfs</td>
<td>10% (1 out of 10 years)</td>
</tr>
<tr>
<td>Existing Conveyance</td>
<td>1% (1 out of 100 years)</td>
</tr>
</tbody>
</table>

- “Big gulp” critical to replenishing storage reserves
- 1.5 MAF is an indicator of wet-year delivery
  - Allows MWD and Water Authority to put supplies into storage
- Delta conveyance facility improves ability to provide wet-year deliveries into storage compared with existing conveyance
Adequate MWD and Water Authority dry-year supplies are key to SWP supply reliability
- Dry year reliability of SWP supplies needs to be seen as both yield and stored water

Frequency and volume of wet-year SWP deliveries is critical to replenishing storage

A north Delta conveyance facility provides best opportunity to ensure “big gulp”
- Addresses Water Authority’s policy principle
- Larger conveyance size provides more opportunities to put SWP supplies into storage
Risk Assessment
Supply and Demand Risk Assessment
Additional Local Projects and Storage

- Previous evaluations focused on imported water supply reliability from SWP

- This assessment evaluates potential for additional local projects and south of Delta storage to improve overall reliability with smaller conveyance
  - Consistent with NRDC and DVF proposals
  - What are the risks associated with these options compared with BDCP Proposed Action?

- Reliability assessment does not take into account costs or financial impacts
  - Evaluated at future meetings
NRDC/DVF Portfolio Concept – Integrate Components for Increased Reliability

<table>
<thead>
<tr>
<th>In–Delta</th>
<th>Out–Of–Delta</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Conveyance</td>
<td>• Local Projects</td>
</tr>
<tr>
<td>• Habitat Restoration</td>
<td>• South of Delta Storage Projects/Programs</td>
</tr>
<tr>
<td>• Levee Improvements</td>
<td></td>
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</tbody>
</table>
Statewide Water Policy and Integrated Water Management

- NRDC and DVF proposed integrated components as comprehensive Delta solution
- In October 2013 Governor released draft Water Action Plan, recognizing importance of an integrated approach to address state water issues
  - Components developed individually by state, federal, regional and local agencies
- Other statewide planning efforts place additional focus on integration
  - 2009 State Water Plan
  - Delta Reform Act (2013 Delta Plan)
  - 2010 CALFED Surface Storage Investigations, Progress Report
Relationship of NRDC/DVF Proposals to BDCP Process

- Proposed to be evaluated as stand-alone alternative in BDCP process, including EIR/EIS
  - Inconsistent with current BDCP Project Objectives and Plan Area

- Unclear if all components could be under a single environmental document and permit

- Need to assess how best to complete environmental processes on various components
NRDC/DVF Integration Concept
San Diego Region Perspective

- NRDC/DVF proposals did not identify specific local projects
  - More risk relying on other water agencies state-wide to develop additional local projects
  - Supply projects are identified in UWMPs

- Assess potential of additional local project development in San Diego Region, rather than statewide, to offset risk in SWP deliveries from MWD
  - Water Authority/member agencies develop additional projects
  - Less risky approach, provides for local control
  - Projects offset decrease in dry-year supplies from MWD due to less storage reserves, which resulted from smaller conveyance
## Examples of Potential Additional Planned Projects within San Diego Region (2030)

<table>
<thead>
<tr>
<th>Potential Additional Planned Supply Projects ¹</th>
<th>Estimated Yield (AF)</th>
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</thead>
<tbody>
<tr>
<td><strong>Member Agency Additional Planned Projects</strong></td>
<td></td>
</tr>
<tr>
<td>Recycled Water and Brackish Groundwater</td>
<td>14,000</td>
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<tr>
<td>City of San Diego Indirect Potable Reuse Project²</td>
<td>34,000</td>
</tr>
<tr>
<td>Otay WD Rosarito Beach Desalination Project³</td>
<td>20,000</td>
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<tr>
<td><strong>Water Authority Regional Seawater Desalination Facility (Pendleton)</strong></td>
<td>56,000 – 165,000</td>
</tr>
<tr>
<td><strong>Total Estimated Yield from Potential Projects</strong></td>
<td>124,000 – 233,000</td>
</tr>
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</table>

¹Projects and estimated yields based on 2010 UWMP, with updated numbers for City of San Diego and Otay Water District proposed projects

²Derived from the City of San Diego’s 2012 Long-Range Water Resources Plan. Doesn’t include Phase 3, 56,000AF Harbor Drive Facility, which if built would be beyond 2030

³Yield from Otay Water District’s 2010 UWMP and is identified as conceptual project in plan
Determine Reduction in MWD Dry-Year Deliveries from Enhanced Local Supply Development (2030)

- Eliminate reliance on MWD stored water
- MWD supply availability of 1.3 MAF in dry-year
  - 800 TAF CR
  - 500 TAF SWP
- Develop approx. 100 TAF of additional new local supplies in San Diego County
- Reduce dry-year demand on MWD to 243 TAF under preferential rights
Risk Assessment – Common Factors Used in Identifying Supply and Demand Risk

- **Permitting Risk**
  Ability to obtain major permits to construct and operate all components necessary to provide water supply

- **Schedule Risk**
  Probability that proposal doesn’t increase likelihood of supply shortages by 2025–2030 as identified in Draft Master Plan

- **Implementation Risk**
  Complexity and difficulty of implementing supply and environmental components of proposal

- **Supply Risk**
  Likelihood of proposal, if implemented, achieving the desired yield of water supply

- **Demand Risk**
  Likelihood there is insufficient demand to take SWP yield identified in each proposal
Risk Assessment Assumptions

- General Approach
  - The more uncertainty and lack of definition the more risk
  - The more components of an alternative and the more parties depended upon to fully implement the more risk
  - The more reliant on external parties for implementation the more risk to San Diego County supply reliability
  - Larger the project, the greater the implementation risk

- Assessing only generalized risk, not whether the cost is worth the reduced risk
  - Integrate cost into future analysis
Risk Assessment Assumptions

- NRDC/DVF modified portfolio approach contains two components
  - In-Delta (conveyance and habitat protection)
  - Out-of-Delta (south of Delta storage and San Diego region local projects)
    - Modified option assumes focus on San Diego projects instead of statewide

- No specific storage projects identified in NRDC or DVF proposals
  - Difficult to analyze permitting, schedule and implementation risks
  - Included in supply risk assessment

- Existing conveyance option not evaluated in this supply reliability risk assessment
  - As demonstrated in previous analysis, doesn’t meet Board’s supply reliability policy principles
What is Risk in Obtaining Major Permits?

In–Delta (Conveyance and Habitat Restoration)

- BDCP Proposed Action less risky because permitting agencies involved in developing conservation measures
  - NRDC option more risky due to lower proposed habitat restoration acreage
    - 40,000 acres compared with 153,000 acres in BDCP
    - Less direct mitigation
    - Unclear proposal will satisfy permitting requirements without wildlife agencies accepting completely revised approach
  - DVF option did not provide specific acreage amount

- In-Delta (Conveyance and Habitat Restoration)
What are the Key Schedule/Implementation Risks? (In–Delta, Conveyance and Habitat Restoration)

- Opposition and potential litigation poses greatest schedule risk
  - Opposition from in-Delta users and other stakeholders for 9,000 cfs alternative
  - Likely opposition from exporters to 3,000 cfs option

- Uncertainty regarding financing and payment commitments is greatest implementation risk
  - Risk exists for all options
  - Cannot obtain permits without demonstrating financing

- Reduced scheduling risk with smaller single tunnel 3,000 cfs facility due to less construction time than two-tunnel options
Local projects have not always developed as planned

Portfolio proposal requires additional planned projects beyond 2010 UWMP verifiable projects

Risks associated with implementation
- Political, financial, institutional, regulatory

Risks lower if proposed project developed locally
- Local control
What is Likelihood of Proposal Achieving Desired Supply Yield?

In–Delta (SWP Reliability)

- In–Delta facilities perspective, 9,000 cfs Delta option provides:
  - Most SWP average yield
  - Better export water quality
  - Better operational redundancy
  - Greatest reliability if Delta levees fail
  - Greater ability to take “big gulp” in wet years to replenish storage to meet dry-year demands

- Supply risk associated with reliance on Decision–Tree Process to select initial operating criteria
  - Initial average estimated to be between 4.7 and 5.6 MAF
  - Future yield dependent on success of restoration efforts
What is Likelihood of Proposal Achieving Desired Supply Yield?

Out–of–Delta (San Diego Region Local Projects)

- Increase San Diego Region supply reliability
  - Further reduce dependence on MWD dry-year deliveries beyond 2010 UWMP
  - Build upon current successes in local supply implementation

- Achieved through development of additional planned projects identified in 2010 UWMP
  - Examples include potential Camp Pendleton desalination and City of San Diego Indirect Potable Reuse
  - Estimated total yield from additional planned projects 124,000 – 223,000AF

- Uncertainties associated with project development
  - Most projects still in initial planning stages
Delta Flows and Conveyance Capacity Limit South of Delta Storage
What is Likelihood of Proposal Achieving Desired Supply Yield?

Out-of-Delta (South of Delta Storage)

- Increase San Diego Region supply reliability
  - Potentially increasing amount of SWP deliveries for all alternatives
  - Contribute to dry year reliability

- BDCP EIR/EIS Appendix 1B included initial analysis on potential increase in total exports with 1 MAF new storage
  - Average of 150,000 AF 9,000 cfs conveyance for fed/state contractors
  - Approx. average of 50,000 AF increase in total yield with 3,000 cfs
  - Increase occurs in wet-years

- Modest Improvement to average SWP yield
  - High Delta outflow criteria and limited wet-year take capacity limit ability to store water
  - South of Delta Storage cannot make-up difference in average yields
  - Potentially more value with low outflow criteria
What is Risk that there is Insufficient Demands to take Delivery of Export Yields?

- Growing water demands statewide
- SWP serves as core source of supply
- BDCP not providing significant new supply, improving reliability of current deliveries
- Increased local projects and use efficiency satisfy growing demands
Projected BDCP SWP deliveries 400,000 AF less than MWD 2010 RUWMP SWP Target
- 2010 RUWMP identified more total supplies (incl. local) than projected demand
- MWD excluding some verifiable member agency projects (e.g., Carlsbad Desalination Project)

MWD SWP target could decrease in 2015 RUWMP
- Overall drop in demands
- Increase in projected local supply development

Greater drop in MWD demand = higher risk of price increases
- NRDC smaller conveyance would be less risky
Observations

- Risk assessment conducted from solely water resources perspective
  - Focus on water supply reliability for California and San Diego region
  - Separate analysis will be conducted evaluating costs and financing risks

- Involvement of Regulatory agencies in BDCP improves likelihood of obtaining ESA permitting of Proposed Action
  - Must complete process and demonstrate funding

- NRDC approach to restoration significantly different that reflected in BDCP documents
  - Unclear whether it can meet biological objectives of permitting agencies and obtain species coverage under current NCCP/HCP process
Observations (cont.)

- Risk of reduced yield if species recovery goals not met during operation
  - BDCP proposing strategies to minimize risk to SWP yield
  - Some actions could impose cost on MWD to maintain yields

- Under high outflow criteria and limited conveyance capacity, new south of delta storage provides limited benefit to increasing SWP yield
  - Cannot make up for entire reduced yield from smaller conveyance capacity
  - Filling MWD storage and Water Authority storage more important to imported water reliability
  - New south of delta storage may have more yield benefits under relaxed regulatory standards
    • Successful restoration and species recovery
Risk of SWP supply reliability best managed through local supply development in San Diego County

- Water Authority and member agencies have proven track record in developing local supplies
- Relying on State or other water agencies to develop local supplies more risky
- Local control allows risk to be managed more effectively
- Still has significant unknowns and risk
- Key question is costs and improvement in reliability
## BDCP Alternatives Review & Analysis: Completed 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>
</tr>
<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>
</tr>
<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>
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<tr>
<td>10/24/2013</td>
<td>Information: Review of technical analysis (cont.), including baselines; BDCP timeline and processes impacting implementation</td>
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<tr>
<td>11/14/2013 Special Meeting</td>
<td>Supply and demand evaluation and analysis</td>
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# BDCP Alternatives Review & Analysis: Upcoming Activities

<table>
<thead>
<tr>
<th>Meeting</th>
<th>Imported Water Committee/Board Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/9/2014</td>
<td>Identification of BDCP Physical features and facilities; supply/demand risk assessment</td>
</tr>
<tr>
<td>Special Meeting</td>
<td></td>
</tr>
<tr>
<td>1/23/2014</td>
<td>Preliminary cost estimates and risk assessment to Water Authority</td>
</tr>
<tr>
<td>2/13/2014</td>
<td>Engineering assessment of BDCP cost estimates</td>
</tr>
<tr>
<td>Special Meeting</td>
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<tr>
<td>2/27/2014</td>
<td>Identification of issues to be addressed in the EIR/EIS comment letter; economic sensitivity analysis</td>
</tr>
<tr>
<td>3/13/2014</td>
<td>Summary presentation of BDCP issues. Review of draft EIR/EIS comment letter</td>
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<tr>
<td>Special Meeting</td>
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</tr>
<tr>
<td>3/27/2014</td>
<td>Action: Consider action on final EIR/EIS comment letter</td>
</tr>
<tr>
<td>4/24/2014</td>
<td>Revise BDCP schedule; discuss outstanding policy issues; timeline for future board meetings</td>
</tr>
</tbody>
</table>