

# 2<sup>nd</sup> Draft Chapter 8 Implementation Costs

Presentation to  
BDCP Steering Committee  
December 3, 2009

# New Cost Information Included in this Draft

- Common assumptions for Delta land values
- Partial cost estimate for tidal habitat restoration
- Complete cost estimate for floodplain restoration
- Partial cost estimate for habitat reserve mngt
- Complete cost estimates for methylmercury TMDL support, agricultural discharge reduction assistance
- Complete cost estimate for invasive aquatic vegetation control assistance
- Revised smelt propagation program costs
- Revised mark-select fishery costs
- Tallies of costs estimated to date, broken down by total, capital, and operating

# Land Value Assumptions

- Hedonic property value models estimated with county assessor and GIS land use classification data for native vegetation, agricultural, semi-agricultural, and urban land classifications
- Land values are spatially disaggregated by ROA
- Values for ROAs in San Joaquin County set to West Delta ROA values

# Tidal Habitat Cost Estimation

- Land costs based on common assumption land values and tally of tidal habitat foot print acreage by land use classification. Tally excludes state/fed lands
- Construction costs developed by Philip Williams & Associates and include costs for:
  - Restoration features
  - Mass grading and fill
  - Temporary and permanent levees (116 mi. total)
  - Permitting, survey, & design (20% of const. cost)
  - Construction management (7% of const. cost)
  - Vegetation establishment (3% of const. cost)
  - Contingency (35% of const. cost)
- Costs estimated separately for each ROA
- Two cost scenarios (A & B) which differ by extent of fill and grading assumed (Scenario B – more grading and fill to increase tidal marsh habitat extent within tidal habitat restoration areas)
- West Delta ROA costs not included in this draft

# Preliminary Tidal Habitat Costs\*

**Scenario A – limited grading and fill associated with restoration**

**Scenario B – more grading and fill to increase ratio of marsh to subtidal habitat**

Scenario A	Total Cost for Tidal Marsh Habitat Per Costing Period										Total Cost
	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	
Due Diligence	2.3	2.3	3.1	4.1	4.1	4.1	4.1	4.1	0.0	0.0	28.2
Land Purchase	34.2	34.2	43.3	62.5	62.5	62.5	62.5	62.5	0.0	0.0	424.2
Construction	104.3	104.3	119.2	178.8	178.8	178.8	178.8	178.8	0.0	0.0	1,221.8
<b>Total (mil. \$)</b>	<b>140.8</b>	<b>140.8</b>	<b>165.6</b>	<b>245.4</b>	<b>245.4</b>	<b>245.4</b>	<b>245.4</b>	<b>245.4</b>	<b>0.0</b>	<b>0.0</b>	1,674.2
<b>Running Total</b>	<b>140.8</b>	<b>281.5</b>	<b>447.2</b>	<b>692.6</b>	<b>938.0</b>	<b>1,183.4</b>	<b>1,428.8</b>	<b>1,674.2</b>	<b>1,674.2</b>	<b>1,674.2</b>	<b>1,674.2</b>
Scenario B	Total Cost for Tidal Marsh Habitat Per Costing Period										Total Cost
	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	
Due Diligence	2.3	2.3	3.1	4.1	4.1	4.1	4.1	4.1	0.0	0.0	28.2
Land Purchase	34.2	34.2	43.3	62.5	62.5	62.5	62.5	62.5	0.0	0.0	424.2
Construction	125.5	125.5	194.8	212.9	212.9	212.9	212.9	212.9	0.0	0.0	1,510.5
<b>Total (mil. \$)</b>	<b>162.0</b>	<b>162.0</b>	<b>241.2</b>	<b>279.5</b>	<b>279.5</b>	<b>279.5</b>	<b>279.5</b>	<b>279.5</b>	<b>0.0</b>	<b>0.0</b>	1,962.9
<b>Running Total</b>	<b>162.0</b>	<b>324.0</b>	<b>565.3</b>	<b>844.8</b>	<b>1,124.3</b>	<b>1,403.8</b>	<b>1,683.4</b>	<b>1,962.9</b>	<b>1,962.9</b>	<b>1,962.9</b>	<b>1,962.9</b>

\* Does not include costs for West Delta ROA

# Habitat Reserve Management Costs

- Costs based on analysis of per acre management costs for 19 National Wildlife Refuges in western U.S.
- Cost model incorporates scale economies associated with managing larger reserves
- Unit costs decrease over time as more acreage comes under management
- Terrestrial habitat management costs not yet factored into analysis

# Other Stressors

- Mercury Remediation
  - Costs provided by CVRWQCB
  - Cache Creek, mine and instream remediation, BMP development & support
  - 3 levels of cost-share considered: 5%, 10%, 15%
- Agricultural Discharge Reduction Support
  - Costs based on NRCS's Agricultural Water Enhancement Program
- Aquatic Vegetation Control
  - 5% of tidal marsh acreage per year
  - Roughly doubles acreage currently treated by DBW
  - Costs per acre based on current DBW control costs
- Smelt Propagation
  - Smelt Refugium costs updated by UC Davis
- Mark-Select Fishery
  - Collection cost estimate for coded wires increased based on input from fishery agencies

# Cost Estimates Still to Come

- Conveyance Facilities
- Fremont Weir/Yolo Bypass improvements
- Terrestrial habitat conservation measures
- West Delta ROA restoration
- OSCMs 1, 2, 5, & 8
- Monitoring and Research Program
- Adaptive Management Program
- Changed Circumstances Responses