

Cost Estimation Status

Bay Delta Conservation Plan
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Chapter 8 Partial Draft

- Chapter 8 Will Include Estimated Costs For
 - Water Facilities & Operations
 - Physical Habitat Restoration
 - Other Stressor Measures
 - Program Administration
 - Monitoring, Adaptive Management
 - Remedial Measures
- Partial Draft has estimates for some, but not all, measures (see status matrix)

If Cost Not In Draft, It's Because...

1. Estimates still under development (e.g. DWR's water facility cost analysis)
2. Prerequisite modeling not completed (e.g. physical modeling of tidal marsh restoration)
3. Waiting for data (e.g. land acquisition costs)
4. Conservation measure requires more specificity (e.g. urban runoff/stormwater discharge assistance)

Important Caveats to Estimates Included in this Draft

- Costs based on measure descriptions in draft Chapter 3, *Conservation Measures*. Some measures may be changed or eliminated from final plan. Costs will be adjusted accordingly.
- Estimated costs do not imply a cost allocation to or funding commitment by any party to the BDCP.
- Chap. 8 does not address socio-economic impacts, only financial costs of plan implementation.

Common Assumptions Applied to All Estimates

1. Costing Periods
2. Financial Assumptions
 - Dollar Denomination
 - Discount Rate
 - Inflation Rate
3. Land Acquisition Costs
 - Due Diligence
 - Land Values
4. Salaries & Benefits
5. Contingency



Overview of 4 Cost Estimates

1. Create 10,000 Acres of Seasonally Inundated Floodplain (HRCM 2 and 3)
2. Cache Creek Settling Basin (OSCM 3)
3. Chinook Salmon Mark-Select Fishery Program (OSCM 19)
4. Implementing Entity Costs (Program Administration)

Seasonally Inundated Floodplain

- Physical Assumptions
 - 7,000 acres on lower SJR, 3,000 acres on Old/Middle Rivers
 - Set back levees 1,000 ft on each side of bank
 - Construct levees to PL84-99 (Delta Specific) standard
 - Total of 11,600 acres required, including levee footprint
- Setback Levee Cost Assumptions
 - Levee costs based on DRMS Levee Optimization Workgroup estimates, as summarized by Betchart (2008)
 - \$2.1 million/mile to upgrade non-project levee to PL84-99
 - \$2.3 million/mile to convert to setback levee
 - \$2.3 million/mile to construct channel margin enhancements
 - Includes (1) planning, design, engineering, (2) mob/demob, (3) const. mgt., and (4) contingency
- Land Acquisition Costs Still To Be Estimated

Table 8.11. Estimated Miles of Setback Levees and Acres of Created Floodplain Habitat by Cost Period

<i>Miles or Acres of Floodplain Habitat Creation</i>	<i>Cost Period</i>										<i>Total Miles or Acres</i>
	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	
San Joaquin R.	-	0.9	2.0	5.2	5.2	5.2	5.2	5.2			28.9
Old/Middle R.	-	0.4	0.9	2.2	2.2	2.2	2.2	2.2			12.4
Total Miles	-	1.3	2.9	7.4	7.4	7.4	7.4	7.4	-	-	41.3
Running Total	-	1.3	4.2	11.6	19.0	26.4	33.8	41.3	41.3	41.3	41.3
Flood Plain Created (Ac)	-	300	700	1800	1800	1800	1800	1800	-	-	10,000
Running Total	-	300	1,000	2,800	4,600	6,400	8,200	10,000	10,000	10,000	10,000

Table 8.13. Estimated Costs for Setback Levees for Floodplain Habitat by Cost Period

<i>Cost by Period (mil. \$)</i>	<i>Cost Period</i>										<i>Total Cost</i>
	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	
San Joaquin R.	0.0	8.0	18.7	48.2	48.2	48.2	48.2	48.2	0.0	0.0	267.6
Old/Middle R.	0.0	5.0	11.7	30.0	30.0	30.0	30.0	30.0	0.0	0.0	166.5
Total Cost	0.0	13.0	30.4	78.1	78.1	78.1	78.1	78.1	0.0	0.0	434.1
Running Total	0.0	13.0	43.4	121.5	199.7	277.8	355.9	434.1	434.1	434.1	434.1

Cache Creek Settling Basin

- Physical Assumptions
 - Raise weir, expand basin, and start sediment removal to achieve 63% methylmercury trapping efficiency
 - Initiate low-level sediment removal in 2016 and intensive removal starting 2044
- Cost Assumptions
 - Costs from CVRWQCB 2008 Study
 - Raise Weir: \$6.3 million
 - Expand Capacity: \$15.5 million
 - Land Easements: \$3.1 million
 - Sediment Removal: \$0.25 million/yr 2016-2043; \$8 million/yr 2044-2050

Table 8.19. Estimated Costs to Expand Cache Creek Settling Basin and Extend Its Useful Life by Cost Period

<i>Cost by Period (mil. \$)</i>	<i>Cost Period</i>										<i>Total Cost</i>
	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	
Raise Weir	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3
Enlarge Basin	15.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.5
Land Easements	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1
Sediment Removal	0.0	1.3	1.3	1.3	1.3	1.3	15.9	37.8	37.8	37.8	135.6
Total Cost	24.9	1.3	1.3	1.3	1.3	1.3	15.9	37.8	37.8	37.8	160.5
Running Total	24.9	26.1	27.4	28.7	29.9	31.2	47.1	84.9	122.7	160.5	160.5

Mark-Select Fishery Program

- Physical Assumptions
 - 32 million Central Valley hatchery salmon
 - 75% currently unmarked
 - Fin clipping and wire coding assumed
 - 6 new autofish trailers required; Pacific Corp assumed to purchase 1 trailer as part of FERC agreement
- Cost Assumptions
 - Mark-Select implementation plan: \$0.25 million
 - Autofish trailer capital cost: \$1.3 million/trailer (20-yr useful life)
 - Marking and coding: \$145/1000 fish
 - Post catch code wire collection: \$3 million/yr

Table 8.36. Estimated HGMP Development and Implementation Support Costs by Cost Period

<i>Costs by Period (mil. \$)</i>	<i>Cost Period</i>										<i>Total Cost</i>
	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	
Plan Develop.	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25
Marking Equip.	2.04	2.04	2.04	2.04	2.04	2.04	2.04	2.04	2.04	2.04	20.41
Marking Operation	17.40	17.40	17.40	17.40	17.40	17.40	17.40	17.40	17.40	17.40	174.00
Wire Collection	6.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	141.00
Total Cost	25.69	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	34.44	335.66
Running Total	25.69	60.13	94.57	129.01	163.45	197.89	232.34	266.78	301.22	335.66	335.66

BDCP Implementing Entity

- Major Cost Estimation Assumptions
 - Stand-alone organization
 - Staffing costs referenced to Resources Agency salary scales
 - Preliminary staffing plan developed by BDCP consulting team
 - Other Implementing Costs
 - Office space, equipment, supplies
 - Employee-assigned equipment
 - Vehicles (owned & rented)
 - Insurance
 - Outside services (legal & accounting)
 - Functional Allocation of Implementing Entity Costs between: (1) administration, (2) restoration, (3) reserve mgt, (4) monitoring

Table 8.41. Staffed Positions and Number of Employees for BDCP Program Administration

<i>Staffing Levels</i>	<i>Avg Annual FTEs Per Cost Period</i>									
Position	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50
Program Manager	1	1	1	1	1	1	1	1	1	1
Deputy Program Manager	1	1	1	1	1	1	1	1	1	1
Program Counsel	1	1	1	1	1	1	1	1	1	1
Habitat Restoration Program Manager	1	1	1	1	1	1	1	1	1	1
Other Stressors Program Manager	1	1	1	1	1	1	1	1	1	1
Monitoring/Research Program Manager	1	1	1	1	1	1	1	1	1	1
IT/Database/GIS Management	1	1	1	1	1	1	1	1	1	1
GIS Specialist	1	1	1	1	1	1	1	1	1	1
Budget Analyst	1	1	1	1	1	1	1	1	1	1
Land Acquisition Specialist	2	3	3	3	2	2	1	1	1	1
Contracts Officer	1	1	1	1	1	1	1	1	1	1
Regulatory Specialist	1	1	1	1	1	1	1	1	1	1
Public Outreach Program Manager	1	1	1	1	1	1	1	1	1	1
Admin - Secretary	2	2	2	2	2	2	2	2	2	2
Clerks	3	3	3	3	3	3	3	3	3	3
Civil Engineer	1	1	1	1	1	1	1	1	1	1
Staff Scientist	2	3	3	3	3	3	3	3	3	3
Water Operations Specialist	2	2	2	2	2	2	2	2	2	2
Habitat Restoration Project Manager	1	2	3	3	3	3	2	2	1	1
Other Stressors Project Manager	2	2	2	2	1	1	1	1	1	1
Terrestrial Preserve Manager	1	1	2	2	2	2	2	2	2	2
Technical Specialist	5	10	10	10	10	10	8	6	5	4
Laborer	2	4	4	6	6	6	6	6	6	6
Total FTE Positions	35	45	47	49	47	47	43	41	39	38

Table 8.44. Total Estimated Costs for BDCP Program Administration

<i>BDCP Implementing Entity Costs (mil.\$)</i>	<i>Cost Period</i>										
	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	Total
Staff Costs*	\$15.7	\$19.3	\$20.3	\$20.9	\$19.9	\$19.9	\$18.2	\$17.6	\$16.8	\$16.5	\$185.0
Office Costs**	\$2.9	\$3.3	\$2.9	\$2.7	\$2.6	\$2.4	\$2.2	\$2.0	\$1.9	\$1.9	\$24.8
Vehicles***	\$0.5	\$0.9	\$1.0	\$1.1	\$1.3	\$1.4	\$1.4	\$1.4	\$1.4	\$1.3	\$11.5
Outside Services****	\$1.9	\$1.9	\$1.9	\$1.0	\$1.0	\$0.5	\$0.5	\$0.5	\$0.5	\$0.5	\$10.5
Liability Insurance	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$0.1	\$1.0
<i>BDCP Implementing Entity Cost Allocation</i>											
Program Administration	\$14.0	\$15.4	\$15.1	\$14.1	\$13.4	\$12.7	\$11.7	\$11.4	\$11.2	\$11.1	\$130.2
Restoration	\$2.8	\$3.9	\$4.3	\$4.4	\$4.1	\$4.1	\$3.5	\$3.4	\$2.9	\$2.8	\$36.2
Reserve Management	\$2.1	\$3.1	\$3.6	\$4.0	\$4.1	\$4.2	\$4.1	\$4.0	\$3.9	\$3.8	\$36.9
Monitoring/Research	\$2.1	\$3.0	\$3.1	\$3.3	\$3.3	\$3.3	\$3.1	\$2.9	\$2.7	\$2.6	\$29.4
Total Costs	\$21.1	\$25.5	\$26.2	\$25.9	\$24.9	\$24.2	\$22.4	\$21.6	\$20.7	\$20.3	\$232.8
Running Total	\$21.1	\$46.6	\$72.7	\$98.6	\$123.5	\$147.7	\$170.1	\$191.8	\$212.5	\$232.8	\$232.8
<p>*Includes employee benefits and incidentals. **Includes costs for office space, general office equip., employee-assigned office equip., specialized office equip., and public outreach expenditures. ***Includes costs for owned and rented vehicles. ****Includes cost for outside accounting and legal services.</p>											