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Appendix O

Funding and Financing Options

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This section describes various funding and financing schemes that will be evaluated for inclusion in the financing strategy. In examining potential sources, approaches used by other major programs around the country were explored. Some of these approaches are described here.

Capital Funding Sources

To implement Delta Plan infrastructure improvements and to fund habitat acquisitions and improvements, capital funding sources will need to be identified.

Federal Appropriations

Federal appropriations typically pay for the taxpayers' share of capital costs. Federal authorization already exists for several Delta programs; however, future funding to continue these programs is uncertain.

General Fund Appropriations

The General Fund includes revenues and spending not required by law to be accounted for in any other fund. Most state expenditures are made from this fund and the legislature may appropriate funds for any purpose. However, the State's fiscal condition will limit the availability of these funds in the future.

Conservation Organizations

Many conservation organizations donate funds for land and water acquisition and management. The Nature Conservancy, for example, has been active in the Delta region. New nonprofit (501(c) (3)) organizations could be established to accept tax-deductible donations for Delta projects and programs.

Repayment and Operations and Maintenance Funding Sources

The Finance Plan will identify revenue sources to repay capital costs and to pay for ongoing operations, maintenance, and replacement costs.

User Charges for Water

Water agencies generate revenue by selling water. Water sale revenues are normally used to pay for water supply and quality costs, including operations and maintenance expenses and debt repayment for facilities. The cost of developing new water supplies is usually factored into the price charged for water.

1 However, surface water sale revenues are influenced by the elasticity of demand. If demand is at all
2 elastic (price responsive), then water users will buy less water as price increases (or shift to groundwater
3 if available), and water revenues may fall below levels needed to meet fixed operating costs. For new
4 water supplies, the required infrastructure may be too costly for current customers given the economic
5 returns they receive for water.

6 Fines and Forfeitures

7 Administrative and civil enforcement actions may result in the collection of fines and forfeitures. Water
8 Code section 13260 authorizes the State Water Resources Control Board (SWRCB) to collect fees that are
9 deposited in the Waste Discharge Permit Fund. For fiscal year 2008–09, revenues and expenditures were
10 about \$80 million. Most of the funds are spent for National Pollutant Discharge Elimination System
11 permit and storm water programs, and for waste discharge requirements. For each program, most costs are
12 for permitting, enforcement, and compliance (SWRCB 2009). The Council should evaluate the potential
13 for assessing fees, fines, and forfeitures for actions detrimental to the Delta directed to Delta activities.

14 Carbon Offsets/Tule Farming

15 A carbon offset is a reduction in emissions of carbon dioxide made in order to compensate for or to offset
16 an emission made elsewhere. The offsets are measured in metric tons of carbon dioxide equivalent and
17 one offset represents the reduction of one metric ton of carbon dioxide.

18 There are two markets for carbon offsets. In the large compliance market, companies and governments
19 buy offsets in order to comply with caps on the total amount of carbon dioxide they are permitted to emit.
20 This market was established to comply with various international agreements and protocols.

21 The smaller voluntary market allows individuals, governments and companies to purchase offsets to
22 offset their own emissions. Offsets are typically achieved through financial support of projects that reduce
23 the emission of carbon dioxide. In other words, a project to reduce or eliminate emissions may be
24 partially paid for by the sale of the offsets. The cost of an offset has recently ranged from \$8 to \$30 per
25 ton-year (California Chapter American Society of Farm Managers and Rural Appraisers 2009).

26 Dead plant material, largely carbon, accumulates in the form of new peat soil on farmed Delta islands.
27 When the farmland is converted to cattails or tules, carbon emissions may be reduced or eliminated. The
28 Delta subsides at a rate of one to three inches per year, mostly in the form of carbon dioxide releases
29 (Ingebritsen, et al. 2000). The amount of carbon emissions from farmed Delta islands is estimated to be
30 2.5 to 6.5 tons per acre per year.

31 The U.S. Geological Survey has been measuring carbon sequestration on an experimental plot on
32 Twitchell Island for about 15 years. The additional carbon dioxide sequestered by cattails or tules
33 amounts to 12 to 20 tons per acre per year using high and low ranges, and potential revenue per acre is
34 \$100 to \$800 per acre per year. It appears that carbon dioxide offsets might repay a significant share of
35 Delta island acquisition and wetland restoration costs. Net revenue of \$200 per acre per year is worth
36 about \$3,000 to \$4,000 per acre in net present value terms as compared to the cost of land, which may be
37 \$3,000 to \$10,000 per acre (California Chapter American Society of Farm Managers and Rural
38 Appraisers 2009).

39 User Fees and Stressor Fees

40 User fees and stressor fees are conceptually similar but somewhat different. User fees may be assessed
41 because the user benefits from improvements funded by the fee. Stressor fees may be assessed to reduce
42 unwanted stressors, and because the fees create an incentive to reduce stressors. User fees are assessed
43 based on the amount of a resource used or consumed. Stressor fees are assessed based on the amount of

1 stressor released or caused. In either case, physical measurement of the amount of use or stressor is
2 necessary.

3 **Diversion Fees**

4 Diversion fees are commonly assessed based on both use and/or stress. That is, diversions may benefit
5 from expenditures, but they may also contribute to stress.

6 A number of factors limit the feasibility of additional diversion fees in California. In particular, water
7 users adamantly oppose any new diversion fees, unless perhaps the fees are developed by water users
8 themselves. In 2005, for example, a letter from 39 water district and city managers to Governor
9 Schwarzenegger included the following request (Senator Perata et al. 2005):

10 *...do not include CALFED user fees as part of the 2005-06 state budget. Any such*
11 *proposal is entirely inappropriate, given that all versions of the CALFED needs*
12 *assessment aired to date have avoided grappling directly with the “beneficiary pays”*
13 *principle. CALFED cost allocations should be proposed only after CALFED has*
14 *conducted an open public hearing process in which all stakeholders have had the*
15 *opportunity to present testimony on appropriate beneficiary payments. Until this process*
16 *has been completed, no financing plan for CALFED can be considered complete and*
17 *ready for implementation as part of the state budget.*

18 Existing laws, such as Proposition 218, limit the ability of any State or local government to establish new
19 diversion fees. Enabling legislation would be required.

20 The potential for diversion fees is also limited by the inconsistency and lack of water diversion
21 measurement in some places. Diversions are measured by a variety of methods, and some diversions are
22 not routinely measured. The costs of standardized measurement could be significant relative to the
23 amount of fees collected.

24 Several efforts in the past estimated the revenues that could be collected if the fees were similar to Bureau
25 of Reclamation restoration fees. In 2000, one author estimated that average non-CVP contract diversions
26 of 13.182 million acre-feet with fee levels similar to CVP restoration fees could provide about
27 \$105 million in annual revenues (Wahl 2000). In 2004, CALFED estimated that potential fee levels per
28 acre-foot-year of diversion would raise \$25 million in annual funds based on “normal” non-CVP contract
29 diversions of 16.522 million acre-feet. These fee levels were \$1.50 for all users, or \$1.25 for agriculture
30 and \$2.50 for urban users, or \$3.25 for Delta exporters and \$1 for all others (CALFED 2004). CALFED
31 also estimated that a residential fee of \$1 per month per household in the CALFED solution area could
32 raise \$106 million annually.

33 **Fishing Fees and Payments**

34 From 2004 through 2009, recreational fishing within the Bay-Delta watershed below the first dam
35 required a Bay-Delta Sport Fishing Enhancement Stamp. In 2009, about 300,000 stamps were sold at a
36 retail cost of \$6.30, and gross revenues were about \$1.9 million. These funds were used for projects and
37 activities that provided a benefit to the primary Bay-Delta sport fisheries and were leveraged with a
38 75 percent cost share from the federal Sport Fish Restoration Act. In 2009, Assembly Bill 1052 repealed
39 the stamp (California Department of Fish and Game 2011a). The Council should consider supporting
40 legislation to renew this user fee funded program.

41 A stressor-based fee could be based on removals of desirable species. In 2011, inland steelhead anglers
42 are required to purchase a Steelhead Report Card at a cost of \$6.48, and a North Coast Salmon Report
43 Card costing \$5.66 is required for all anglers taking salmon in the Smith River System or Klamath-Trinity
44 River System (California Department of Fish and Game 2011b). Annual revenues from 2001 to 2006

1 from the steelhead card averaged about \$200,000 (Jackson 2007). Any person fishing commercially for
2 salmon in California must purchase a commercial fishing salmon stamp for \$85.

3 Similar fees might be collected when substantial salmon fishing is again allowed in the Bay-Delta system.
4 In 2006, about 500,000 freshwater and 1 million saltwater days were taken for salmon fishing (California
5 Department of Fish and Game 2010). Revenue potential from recreational salmon cards is estimated to be
6 \$500,000 to \$1 million annually.

7 **Hydropower Fees**

8 Fees could be collected from hydropower generators in the Bay-Delta system. The SWRCB collects fees
9 from licensed Federal Energy Regulatory Commission projects at a rate of \$0.017 per kilowatt of
10 generating capacity. Higher fees will be collected from generators that recently renewed their Federal
11 Energy Regulatory Commission licenses at higher assessment rates (SWRCB 2010). These fees must be
12 used to cover authorized costs of the Water Rights Program. The estimated amount of revenues from
13 increased fee assessments on hydropower generators is unknown.

14 **Other Stressor Fees**

15 A variety of stressor fees might be used to help finance programs recommended in the Delta Plan. Seven
16 types of stressor fees could be considered:

- 17 1. Water quality loading charge: charge measured pollutant loads in water discharges.
- 18 2. Land use charge: charge land use practices that contribute to stressors.
- 19 3. Retail sales fees: charge retail sales of products that may become stressors.
- 20 4. Habitat alteration fees: charge existing or proposed land alterations that contribute to habitat
21 stressors.
- 22 5. Special diversion fees: charge water diversions that contribute more than average to entrainment,
23 stranding, or flow-related habitat loss.
- 24 6. Recreation use fees: charge for recreation that contributes to stressors.
- 25 7. Hatchery fees: charge hatcheries for management practices that damage Delta resources.

26 Some pollutants, ammonia and certain chemicals in particular, originate known sources and the amount of
27 the pollutant load can be measured. The cost of removing the stressors may determine a fair and efficient
28 charge level. There are complex measurement issues and administrative costs to consider, but these may
29 be minor compared to revenues.

30 The other stressor-based fees are generally not as straightforward. With respect to a fee for land
31 management practices that release methyl mercury, for example, the stressor being introduced is often
32 diffuse, not well measured, and the amount may vary substantially based on location and local conditions.
33 It may be unfair or expensive to set land use changes based on diffuse and hard-to-measure stressors. The
34 provisions of Proposition 218 procedures must be apply to the assessment of storm water fees, and it
35 would likely apply to land use charges as well.

36 A charge on retail sales of stressor materials such as pesticides or fertilizers might also be problematic
37 because these materials are used in a wide variety of locations and applications. The legality of this type
38 of charges is not clear.

39 There is some potential for establishing charges certain types of habitat alteration practices, such as
40 wetland conversions. However, these charges might also fall under Proposition 218. The special diversion

1 charge would be difficult to justify because the amount of unusual damage via entrainment, stranding, or
2 flow habitat loss would often be difficult to quantify and value. Hatchery management fees might be
3 inefficient compared to other efforts to improve hatchery practices.

4 The revenue potential from stressors fees is unknown, but is probably minor. Also, it is likely that any
5 stressor fees could only be spent for a very limited range of activities that would benefit the persons
6 paying the fee under Proposition 26. There is, however, some potential for revenues in the form of fishing
7 stamps (probably less than \$5 million annually) and additional water quality loading charges.

8 Water Marketing Fees

9 Water marketing fees would be assessed against water transfers in the Delta watershed. These fees would
10 be above and beyond any existing watershed diversion or export fees. The SWRCB currently collects fees
11 associated with change in water rights that may be required for transfers. This concept can only work if
12 water transfers can occur in an cost efficient and timely manner.

13 The number of water transfers between existing water agencies is not large compared to total statewide
14 water use. During the drought years of 2008 and 2009, about 400,000 acre-feet of cross-Delta transfers
15 were reported annually.¹ If these transfers were assessed a fee of \$10 per acre-foot, revenues could total
16 \$4 million annually. However, the volume of transfers in most years would be much less than in 2008 and
17 2009.

18 Water Resources Fee

19 A statewide assessment would feature equal application and would be comprehensive, free of loopholes,
20 affordable, understandable, and easy and inexpensive to administer, It would be applied at the retail level
21 with different rates for nonagricultural (acre-feet of water used) and agricultural water users (number of
22 acres irrigated). Proceeds from the assessments would be split equally for statewide and interregional
23 projects and for regional projects. The State Board of Equalization would collect and administer the
24 revenues.

25 Assessment income in the statewide account would pay for administration costs, the operations costs of
26 the Delta Stewardship Council, the Delta Conservancy, and the Delta Protection Commission, scientific
27 studies, and debt service on general obligation bonds for projects that provide statewide public benefits.
28 Regional projects would qualify for funding if they are consistent with an integrated regional water
29 management plan, a storm water resources plan, a groundwater management plan, or a water quality
30 control plan.

31 Public Goods Charges

32 In 1996 a public goods charge for electricity sold by CPUC-regulated for-profit public utilities was
33 approved in California as part of the energy sector deregulation. The public goods charge is a monthly fee
34 assessed to residential and industrial customers to fund energy efficiency programs. However, the
35 enabling statute authorizing assessment of this fee expired at the end of 2011.

36 There has been some interest in a public-goods charge for water as a potential tool for achieving the
37 objectives of Assembly Bill 32, known as “The Global Warming Solutions Act of 2006.” (Griffin,
38 Leventis, and McDonald 2010). In a study prepared for the California Public Utilities Commission by the
39 U.C. Berkeley Goldman School of Public Policy, a public goods charge for water was proposed that
40 consisted of a volumetric charge on individual water utility bills.

¹ *Water Strategist*, February 2009 issue provides 2008 summary (Smith 2009).

1 While the design of a public-goods charge for water would need to be developed, given the passage of
2 Proposition 26, a two-thirds vote would be required to implement it. The primary purpose of a public-
3 goods charge should be to fund investments or activities that have broad, statewide benefit. These might
4 include statewide planning, ecosystem enhancements, or investments that reduce reliance on imported
5 supplies. A public-goods charge could ensure a minimum investment by all urban and agricultural water
6 agencies in water use efficiency and other tools that can reduce reliance on imported water. It could also
7 provide a consistent funding stream over time. Actual activities to be funded would need to be more
8 definitely described before it could be presented to the voters.

9 **Financing Methods**

10 **State-issued Debt**

11 State law authorizes the issue of two types of debt for water related infrastructure: general obligation
12 bonds and revenue bonds. General obligation bonds must be approved by voters, and repayment is
13 guaranteed by the State's general taxing power, resulting in typically low interest costs. Revenue bonds
14 do not require voter approval because they are secured by a dedicated revenue stream, such as water sales.

15 **Local Government Debt**

16 Capital expenditures may be funded by debt issued by local agencies. Depending on the type of project
17 being financed, local agencies may issue debt based on increased revenue streams or may establish
18 improvement or assessment districts.

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