

4.3.10 Agricultural Resources

Impact AG-1: Temporary Conversion, Short-Term Conversion, and Permanent Conversion of Important Farmland or of Land Subject to Williamson Act Contracts or in Farmland Security Zones as a Result of Constructing the Proposed Water Conveyance Facility

NEPA Effects: The temporary and short-term conversion and permanent conversion of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones to nonagricultural uses would be identical to those described under Alternative 4 (as described in Chapter 14, *Agricultural Resources*, Section 14.3.3.9 in Appendix A of this RDEIR/SDEIS) and would constitute an adverse effect on the physical environment. Alternative 4A would result in the temporary or short-term conversion of approximately 1,495 acres of Important Farmland and 1,132 acres of land subject to Williamson Act contracts to other uses. Permanent features associated with this alternative could convert approximately 3,909 acres of Important Farmland and 2,035 acres of land subject to Williamson Act contracts to other uses. Mapbook Figure M14-7 in the Mapbook Volume of the Draft EIR/EIS shows all of the construction features (including temporary work areas) associated with this proposed water conveyance facility alignment along with Important Farmland. Disposal and reuse of RTM (described in Appendix 3B, *Environmental Commitments*, in Appendix A of this RDEIR/SDEIS), along with Mitigation Measure AG-1, would be available to reduce these effects.

CEQA Conclusion: Construction of physical structures associated with the water conveyance facility proposed under this alternative would occupy Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones, directly precluding agricultural use for the duration of construction. Temporary and short-term construction of facilities would convert approximately 1,495 acres of Important Farmland and 1,132 acres of land subject to Williamson Act contracts or in Farmland Security Zones to other uses. Physical structures would also permanently convert approximately 3,909 acres of Important Farmland and 2,035 acres of land subject to Williamson Act contracts or in Farmland Security Zones to other uses. As described above and in Appendix 3B, *Environmental Commitments*, in Appendix A of this RDEIR/SDEIS, it is anticipated that the RTM and dredged material would be removed from RTM storage areas (which represent a substantial portion of the permanent impact areas) and reused, as appropriate, as bulking material for levee maintenance, as fill material for habitat restoration projects, or other beneficial means of reuse identified for the material. Because these activities would convert a substantial amount of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones to nonagricultural uses, however, they are considered significant impacts on the environment. Implementation of Mitigation Measure AG-1 would reduce these impacts by implementing activities such as siting project footprints to encourage continued agricultural production; relocating or replacing agricultural infrastructure in support of continued agricultural activities; engaging counties, owners/operators, and other stakeholders in developing optional agricultural stewardship approaches; and/or preserving agricultural land through offsite easements or other agricultural land conservation interests. However, these impacts remain significant and unavoidable after implementation of this measure for the same reasons provided under Alternative 4. For further discussion of potential incompatibilities with land use designations, see Section 4.3.9, *Land Use*, in this RDEIR/SDEIS.

1 **Mitigation Measure AG-1: Develop an Agricultural Lands Stewardship Plan (ALSP) to**
2 **Maintain Agricultural Productivity and Mitigate for Loss of Important Farmland and Land**
3 **Subject to Williamson Act Contracts or in Farmland Security Zones**

4 Please see Mitigation Measure AG-1 under Impact AG-1 in the discussion of Alternative 4 in the
5 Draft EIR/EIS.

6 **Impact AG-2: Other Effects on Agriculture as a Result of Constructing and Operating the**
7 **Proposed Water Conveyance Facility**

8 Effects associated with construction and operation of the water conveyance facility under this
9 alternative would be identical to those described under Alternative 4 in terms of effects related to
10 seepage from the operation of forebays and from disruption of drainage and irrigation facilities
11 during construction of water conveyance facilities. The conveyance alignment constructed under
12 this alternative would cross or interfere with approximately 43 miles of agricultural delivery canals
13 and drainage ditches. These activities could create indirect but adverse effects on agriculture by
14 converting substantial amounts of Important Farmland to other uses through changes to
15 groundwater elevation in localized areas adjacent to forebays and through disruption of drainage
16 and irrigation facilities.

17 Under Alternative 4A, Operational Scenarios H3 and H4, the operation of new physical facilities
18 combined with hydrodynamic effects of habitat restoration activities could indirectly affect
19 agriculture by causing changes to the quality of irrigation water in parts of the study area. Relative
20 to Existing Conditions, Alternative 4A would result in an increase in the number of days the Bay-
21 Delta WQCP EC objectives would be exceeded in the Sacramento River at Emmaton, and in the San
22 Joaquin River at San Andreas Landing (Table EC-1 in Appendix B of this RDEIR/SDEIS). The percent
23 of days the Emmaton EC objective would be exceeded for the entire period modeled (1976–1991)
24 would increase from 6% under Existing Conditions to 17–18% and the percent of days out of
25 compliance would increase from 11% under Existing Conditions to 26–28%, depending on the
26 operations scenario. The percent of days the San Andreas Landing EC objective would be exceeded
27 would increase from 1% to 2% under Operational Scenario H3, and would decrease to 0% under
28 Operational Scenario H4. The percent of days out of compliance with the EC objective for San
29 Andreas Landing would increase from 1% to 4% for Operational Scenario H3, and would decrease to
30 0% under Operational Scenario H4.

31 As discussed in Section 4.3.4, *Water Quality*, of this RDEIR/SDEIS, sensitivity analyses suggest that
32 many of these modeled exceedances are a result of modeling artifacts or a result of operating rules
33 used by the CALSIM II model under extreme hydrologic and operational conditions where there is
34 not enough water supply to meet all requirements. In these cases, CALSIM II uses a series of
35 operating rules to reach a solution that is a simplified version of the very complex decision
36 processes that SWP and CVP operators would use in actual extreme conditions. Thus, it is unlikely
37 that the Emmaton objective would actually be violated due to dead pool conditions, as suggested by
38 modeling results. In the case of San Andreas Landing, the small number of modeled exceedances not
39 attributable to modeling artifacts would be small in magnitude, last only a few days, and could be
40 addressed with real time operations of the SWP and CVP (see Chapter 8, *Water Quality*, Section
41 8.3.1.1, in Appendix A of this RDEIR/SDEIS for a description of real time operations of the SWP and
42 CVP). However, the results at Emmaton indicate that water supply could be either under greater
43 stress or under stress earlier in the year, and EC levels at Emmaton and in the western Delta may

1 increase as a result, leading to EC degradation and increased possibility of adverse effects on
2 agricultural beneficial uses.

3 Average EC levels at the western and southern Delta compliance locations would decrease, except at
4 Emmaton during the drought period, from 3–38% for the entire period modeled (1976–1991) and
5 3–32% during the drought period modeled (1987–1991) (Tables EC-8A and EC-8B in Appendix B of
6 this RDEIR/SDEIS). At Emmaton, there would be an increase in average EC for the drought period of
7 4–5%, and a decrease of 5–7% for the entire period modeled. There would be increases in average
8 EC at two interior Delta locations: the S. Fork Mokelumne River at Terminous average EC would
9 increase 5% for the entire period modeled and 4% during the drought period modeled; and San
10 Joaquin River at San Andreas Landing average EC would decrease 6% for the entire period modeled,
11 but increase 1–3% during the drought period modeled. The geographic extent and magnitude of EC
12 increases relative to Existing Conditions would be smaller than those described for Alternative 4 in
13 Chapter 8, *Water Quality*, Section 8.3.3.9 in Appendix A of this RDEIR/SDEIS.

14 Relative to the No Action Alternative (ELT), the percent of days exceeding EC objectives or percent
15 of days out of compliance would increase at the Sacramento River at Emmaton, San Joaquin River at
16 San Andreas Landing, and Old River near Middle River and at Tracy Bridge (Table EC-1 in Appendix
17 B of this RDEIR/SDEIS). The increase in percent of days exceeding the EC objective would be 5% or
18 less at these locations, depending on the operational scenario (i.e., H3 or H4). The increase in
19 percent of days out of compliance would be 7% or less at these locations, depending on the
20 operational scenario.

21 In general, the changes in frequency of exceedances of EC objectives relative to the No Action
22 Alternative (ELT) would be similar to those discussed above relative to Existing Conditions, and thus
23 the conclusions of the sensitivity analyses discussed above extend to the comparison to the No
24 Action Alternative (ELT). For the entire period and drought period modeled, average EC levels
25 would increase at interior and southern Delta locations: the average EC increase would be 5% for
26 the S. Fork Mokelumne River at Terminous and 1% or less in Old River at Middle River and Tracy
27 Bridge (Tables EC-8A and EC-8B in Appendix B of this RDEIR/SDEIS). The geographic extent and
28 magnitude of EC increases relative to the No Action Alternative (ELT) would be smaller than those
29 described for Alternative 4 in Chapter 8, *Water Quality*, Section 8.3.3.9, in Appendix A of this
30 RDEIR/SDEIS.

31 **NEPA Effects:** Considered together, construction and operation of the water conveyance facility
32 under this alternative could create indirect but adverse effects on agriculture by converting
33 substantial amounts of Important Farmland to other uses through changes to groundwater elevation
34 in localized areas and disruption of drainage and irrigation facilities. Water quality modeling results
35 indicate that it is unlikely that there would be increased frequency of exceedance of agricultural EC
36 objectives in the western, interior, or southern Delta. However, there could be increased long-term
37 and drought period average EC levels during the summer months in the Sacramento River at
38 Emmaton under Alternative 4A relative to the No Action Alternative, which could adversely affect
39 agricultural beneficial uses. Implementation of Mitigation Measures AG-1, GW-1, GW-5, and WQ-11
40 (including Mitigation Measure WQ-11a) will reduce the severity of these adverse effects.

41 **CEQA Conclusion:** Water conveyance facility construction and operation could create a significant
42 impact on agriculture by converting substantial amounts of Important Farmland to other uses
43 through changes to groundwater elevation in localized areas and disruption of drainage and
44 irrigation facilities. Water quality modeling results indicate that average EC levels at Emmaton

1 would increase by up to 5% relative to Existing Conditions during the summer months of the
2 drought period, and more generally in dry and critical water year types. The increases during the
3 drought period could cause substantial degradation of water quality and thereby impact the
4 agricultural beneficial uses in the western Delta. The western Delta is CWA Section 303(d) listed for
5 elevated EC and the increased EC degradation that could occur in the western Delta could make
6 beneficial use impairment measurably worse. The comparison to Existing Conditions reflects
7 changes in EC due to both Alternative 4A operations and climate change/sea level rise.

8 Implementation of Mitigation Measures AG-1, GW-1, GW-5, and WQ-11 (including Mitigation
9 Measure WQ-11a) will reduce the severity of these impacts by implementing activities such as siting
10 project footprints to encourage continued agricultural production; monitoring changes in
11 groundwater levels during construction; offsetting water supply losses attributable to construction
12 dewatering activities; monitoring seepage effects; relocating or replacing agricultural infrastructure
13 in support of continued agricultural activities; engaging counties, owners/operators, and other
14 stakeholders in developing optional agricultural stewardship approaches; and/or preserving
15 agricultural land through offsite easements or other agricultural land conservation interests.
16 Implementation of Mitigation Measure WQ-11 (including Mitigation Measure WQ-11a) would be
17 expected to reduce the water quality effects on agricultural resources to a less-than-significant level.
18 However, the impact related to conversion of Important Farmland would remain significant and
19 unavoidable after implementation of these measures for the same reasons provided under
20 Alternative 4.

21
22 **Mitigation Measure AG-1: Develop an Agricultural Lands Stewardship Plan (ALSP) to**
23 **Maintain Agricultural Productivity and Mitigate for Loss of Important Farmland and Land**
24 **Subject to Williamson Act Contracts or in Farmland Security Zones**

25 Please see Mitigation Measure AG-1 under Impact AG-1 in the discussion of Alternative 4 in
26 Chapter 14, *Agricultural Resources*, of the Draft EIR/EIS.

27 **Mitigation Measure GW-1: Maintain Water Supplies in Areas Affected by Construction**
28 **Dewatering**

29 Please see Mitigation Measure GW-1 under Impact GW-1 in the discussion of Alternative 1A in
30 Chapter 7, *Groundwater*, of the Draft EIR/EIS.

31 **Mitigation Measure GW-5: Agricultural Lands Seepage Minimization**

32 Please see Mitigation Measure GW-5 under Impact GW-5 in the discussion of Alternative 1A in
33 Chapter 7, *Groundwater*, of the Draft EIR/EIS.

34 **Mitigation Measure WQ-11: Avoid, Minimize, or Offset, as Feasible, Reduced Water**
35 **Quality Conditions**

36 Please see Mitigation Measure WQ-11 under Impact WQ-11 in the discussion of Alternative 1A
37 in Chapter 8, *Water Quality*, of the Draft EIR/EIS. (Mitigation Measure WQ-11b does not apply to
38 Alternative 4A).

1 **Mitigation Measure WQ-11a: Adaptively Manage Diversions at the North and South Delta**
2 **Intakes to Reduce or Eliminate Water Quality Degradation in Western Delta**

3 Please see Mitigation Measure WQ-11a under Impact WQ-11 in the discussion of Alternative 4A
4 in Section 4.3.4, *Water Quality*, of this RDEIR/SDEIS.

5 **Impact AG-3: Temporary Conversion, Short-Term Conversion, and Permanent Conversion of**
6 **Important Farmland or of Land Subject to Williamson Act Contracts or in Farmland Security**
7 **Zones as a Result of Implementing the Proposed Environmental Commitments 3, 4, 6–12, 15,**
8 **and 16**

9 Effects of Alternative 4A related to the conversion of Important Farmland and land subject to
10 Williamson Act contracts or in Farmland Security Zones associated with these environmental
11 commitment activities would be similar to those described for Alternative 4. However, as described
12 under Section 4.1, *Introduction*, of this RDEIR/SDEIS, Alternative 4A would restore up to
13 approximately 15,548 acres of habitat under Environmental Commitments 3, 4, 6–10 as compared
14 with 83,800 acres under Alternative 4. Channel margin enhancement would be implemented on up
15 to 4.6 levee miles compared to 20 miles under Alternative 4. Similarly, Environmental Commitments
16 11, 12, 15, and 16 would be implemented only at limited locations. Installation of nonphysical fish
17 barriers at Georgiana Slough may require conversion of a small area of Important Farmland for
18 potential construction of an access road and/or storage facility. Conservation Measures 2, 5, 13, 20,
19 and 21 would not be implemented as part of this alternative. Considered together, the magnitude of
20 effects under Alternative 4A would likely be substantially smaller than those associated with
21 Alternative 4.

22 **NEPA Effects:** Because locations have not been selected for many of these habitat restoration and
23 enhancement activities, the precise extent of this effect is unknown. However, based on the large
24 proportion of land in the Conservation Zones designated as Important Farmland and/or subject to
25 Williamson Act contracts or in Farmland Security Zones, it is anticipated that a substantial area of
26 Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones
27 would be directly converted to habitat purposes under this alternative, resulting in an adverse effect
28 on the environment. While conflicts with or cancellation of Williamson Act contracts would not—by
29 itself—constitute an adverse effect on the quality of the human environment, the related conversion
30 of the underlying agricultural resource would result in such an effect. Mitigation Measure AG-1
31 would be available to lessen the severity of these potential effects. Also, under the provisions of
32 Government Code §51223, it may be feasible to rescind Williamson Act contracts for agricultural
33 use, and enter into open space contracts under the Williamson Act, or open space easements
34 pursuant to the Open Space Easement Act. To the extent this mechanism is used, it would eliminate
35 the Williamson Act conflicts otherwise resulting from changes from agriculture to restoration and
36 mitigation uses. For further discussion of potential incompatibilities with land use policies, see
37 Section 4.3.9, *Land Use*, of this RDEIR/SDEIS.

38 **CEQA Conclusion:** This alternative would restore up to 1,400 acres under environmental
39 commitments geared toward the restoration of various natural communities. Additionally, up to 4.6
40 linear miles of channel margin habitat would be enhanced. Implementation of restoration activities
41 and other conservation actions could result in conversion of a substantial amount of Important
42 Farmland and conflict with land subject to Williamson Act contracts or in Farmland Security Zones,
43 resulting in a significant impact on agricultural resources in the study area. Implementation of
44 Mitigation Measure AG-1 will reduce the severity of these impacts by implementing activities such

1 as siting features to encourage continued agricultural production; relocating or replacing
2 agricultural infrastructure in support of continued agricultural activities; engaging counties,
3 owners/operators, and other stakeholders in developing optional agricultural stewardship
4 approaches; and/or preserving agricultural land through offsite easements or other agricultural
5 land conservation interests. However, these impacts remain significant and unavoidable after
6 implementation of this measure for the same reasons provided under Alternative 4.

7 **Mitigation Measure AG-1: Develop an Agricultural Lands Stewardship Plan (ALSP) to**
8 **Maintain Agricultural Productivity and Mitigate for Loss of Important Farmland and Land**
9 **Subject to Williamson Act Contracts or in Farmland Security Zones**

10 Please see Mitigation Measure AG-1 under Impact AG-1 in the discussion of Alternative 4 in
11 Chapter 14, *Agricultural Resources*, of the Draft EIR/EIS.

12 **Impact AG-4: Other Effects on Agriculture as a Result of Implementing the Proposed**
13 **Environmental Commitments 3, 4, 6–12, 15, and 16**

14 Effects of Alternative 4A related to the conversion of Important Farmland and land subject to
15 Williamson Act contracts or in Farmland Security Zones associated with these environmental
16 commitment activities would be similar to those described for Alternative 4. However, as described
17 under Section 4.1, *Introduction*, of this RDEIR/SDEIS, Alternative 4A would restore up to
18 approximately 15,548 acres of habitat as compared with 83,800 acres under Alternative 4. Channel
19 margin enhancement would be implemented on up to 4.6 levee miles compared to 20 miles under
20 Alternative 4. Similarly, Environmental Commitments 11, 12, 15, and 16 would be implemented only
21 at limited locations. Conservation Measures 2, 5, 13, 20, and 21 would not be implemented as part of
22 this alternative. Therefore, the magnitude of effects under Alternative 4A would likely be
23 substantially smaller than those associated with Alternative 4, and effects on agricultural activities
24 related to increased frequency of floodplain inundation would not occur.

25 Increased frequency of inundation associated with proposed tidal habitat restoration and channel
26 margin habitat enhancement would result in increased groundwater recharge, which could result in
27 groundwater level rises and soil saturation on adjacent lands, as described under Chapter 7,
28 *Groundwater*, Impact GW-6, in Appendix A of this RDEIR/SDEIS. These conditions could limit
29 agricultural production in certain areas. Conversely, in areas where the project results in a larger
30 vertical distance between the water table and crop roots, plants with shallow roots may not be able
31 to extract enough water to maintain optimal growth without modifying irrigation or drainage
32 infrastructure. While the geographic incidence and potential severity of these effects are unknown
33 and would depend on existing localized groundwater levels in the vicinity of sites chosen for
34 restoration, they would be anticipated to create an adverse effect on agricultural resources if they
35 were to substantially restrict agricultural uses.

36 As discussed in Section 4.3.4, *Water Quality*, under Impact WQ-12 in this RDEIR/SDEIS,
37 implementation of these conservation actions would not introduce new sources of EC into the study
38 area. Therefore, as they relate to salinity of irrigation water, these measures would not be
39 anticipated to restrict agricultural uses within the study area. Implementation of tidal wetland
40 restoration would increase the exchange of tidal water in restoration areas; however, consideration
41 of this measure and its potential effects on electrical conductivity in the Delta has been incorporated
42 in the assessment of water conveyance facility operations under Impact AG-2.

1 Construction activities and the permanent footprints associated with land acquired for habitat
2 restoration or enhancement could directly or indirectly disrupt existing agricultural irrigation and
3 drainage facilities throughout the study area. Where irrigation or drainage infrastructure is
4 disconnected from the farmland it serves, agricultural uses could be substantially restricted.
5 However, the location and severity of this effect would depend on site-specific conditions.

6 Restoration implemented under Alternative 4A could result in substantial changes in land use
7 patterns in parts of the study area, which could indirectly affect some farmlands by causing changes
8 to the microclimates surrounding sensitive agricultural crops. For example, large areas of tidal
9 habitat could create a localized climate that would be less supportive of yields of certain crops
10 adjacent to the areas. However, this effect is speculative and its potential severity would depend on
11 site-specific conditions.

12 The project proponents would acquire and protect up to approximately 10,100 acres of cultivated
13 lands and manage them for specific habitat values corollary to agricultural use for species including
14 Swainson's hawk, giant garter snake, greater sandhill crane, white-tailed kite, and tricolored
15 blackbird. While acquisition of these lands would protect agricultural uses on the majority of these
16 lands, specific management actions implemented could reduce crop yields, restrict crop choices, and
17 convert small portions of cultivated lands to nonagricultural uses, as described under Alternative 4.
18 Overall, these effects would not be anticipated to result in the substantial restriction of agricultural
19 uses.

20 **NEPA Effects:** Implementation of conservation actions under this alternative could create indirect
21 but adverse effects on agriculture by converting substantial amounts of Important Farmland to
22 other uses through changes to groundwater elevation and seepage or disruption of drainage and
23 irrigation facilities. Further evaluation of these effects would depend on additional information
24 relating to the location of these activities and other detailed information. However, implementation
25 of Mitigation Measures AG-1 and GW-5 will reduce the severity of these adverse effects.

26 **CEQA Conclusion:** Implementation of conservation actions under this alternative could create a
27 significant impact on agriculture by converting substantial amounts of Important Farmland to other
28 uses through changes to groundwater elevation and seepage or disruption of drainage and irrigation
29 facilities. Further evaluation of these effects would depend on additional information relating to the
30 location of these activities and other detailed information. Implementation of Mitigation Measures
31 AG-1 and GW-5 will reduce the severity of these impacts by implementing activities such as siting
32 features to encourage continued agricultural production; monitoring seepage effects; relocating or
33 replacing agricultural infrastructure in support of continued agricultural activities; engaging
34 counties, owners/operators, and other stakeholders in developing optional agricultural stewardship
35 approaches; and/or preserving agricultural land through offsite easements or other agricultural
36 land conservation interests. However, these impacts remain significant and unavoidable after
37 implementation of these measures for the same reasons provided under Alternative 4.

38 **Mitigation Measure AG-1: Develop an Agricultural Lands Stewardship Plan (ALSP) to**
39 **Maintain Agricultural Productivity and Mitigate for Loss of Important Farmland and Land**
40 **Subject to Williamson Act Contracts or in Farmland Security Zones**

41 Please see Mitigation Measure AG-1 under Impact AG-1 in the discussion of Alternative 4 in
42 Chapter 14, *Agricultural Resources*, of the Draft EIR/EIS.

- 1 **Mitigation Measure GW-5: Agricultural Lands Seepage Minimization**
- 2 Please see Mitigation Measure GW-5 under Impact GW-5 in the discussion of Alternative 1A in
- 3 Chapter 7, *Groundwater*, of the Draft EIR/EIS.