

*CEQA Conclusion*

If heartscale, San Joaquin spearscale, Heckard's pepper grass, California alkali grass, and saline clover are present in the alkaline grasslands of the Project area, impacts would be **significant** because construction of Alternative 4 could result in substantial loss of, affect the long-term survival of, or permanently reduce the acreage and quality of suitable habitat for special status plant species through direct effects resulting from construction or indirect effects from construction or maintenance resulting from the introduction or spread of invasive plant species. During operations, impacts would be **less than significant** because the Project is not anticipated to result in substantial mortality or loss of habitat for special-status plant species, which are tolerant of moist soils and have evolved in an area that is subject to regular inundation.

Implementation of Mitigation Measures MM-TERR-1 and MM-TERR-19 would reduce construction and maintenance impacts to special-status species and their habitat to **less than significant**.

#### **9.3.3.5.2 Impact TERR-2: Potential Disturbance or Mortality of Valley Elderberry Longhorn Beetle and Loss of Its Habitat (Elderberry Shrubs)**

Based on 2014 surveys, the construction disturbance area for Alternative 4, including construction, staging, and spoils areas, contains two elderberry shrubs, which are the host plant for valley elderberry longhorn beetle. One of these shrubs is located within California native annual and perennial grassland (non-riparian). The other is located in Fremont cottonwood forest (riparian). An additional elderberry shrub is located in California native annual and perennial grassland outside the footprint, but within the study area, for this alternative. In addition, the 2014 survey area did not cover the entirety of the Alternative 4 study area along the transport channel and this unsurveyed area could include elderberry shrubs.

Construction of Alternative 4 would result in permanent effects on two elderberry shrubs and temporary effects on one elderberry shrub. In addition, construction of Alternative 4 would result in permanent effects on 1.8 acres (the same as Alternative 3) and temporary effects on 1.3 acres (the same as Alternative 3) of known suitable valley elderberry longhorn beetle habitat (Table 9-7).

The analysis of the potential significance of construction-related direct and indirect effects and maintenance effects of Alternative 4 on valley elderberry longhorn beetle and its elderberry host plant is the same as that for Alternative 3.

The Lead Agencies expect the operations effects of Alternative 4 to be the same as those described for Alternative 3 because the areas of increased inundation under Alternative 4 do not occur in habitat that supports the valley elderberry longhorn beetle's elderberry host plant.

*CEQA Conclusion*

Construction impacts to valley elderberry longhorn beetle and its habitat would be **significant** because construction of Alternative 4 would result in permanent effects on one elderberry shrub and temporary effects on one elderberry shrub and would result in permanent effects on 1.8 acres and temporary effects on 1.3 acres of suitable valley elderberry longhorn beetle habitat. Maintenance impacts would be **significant** if elderberry shrubs that become established in the

channels are not removed before they provide habitat for valley elderberry longhorn beetle. Operations impacts would be **less than significant** because the limited increase in the average number of wet days under Alternative 3 is not likely to lead to a type conversion of habitat that would prevent reproduction and growth of elderberry shrubs.

Implementation of Mitigation Measures MM-TERR-2 through MM-TERR-11 would reduce construction and maintenance impacts to valley elderberry longhorn beetle and its elderberry host plant to **less than significant**.

#### **9.3.3.5.3 Impact TERR-3: Potential Disturbance or Mortality of and Loss of Suitable Habitat for Giant Garter Snake**

Construction of Alternative 4 would result in temporary impacts to 44.9 acres and permanent impacts to 47.4 acres of suitable giant garter snake aquatic habitat (Table 9-8.). In addition, construction of Alternative 4 would result in temporary disturbance to 71.7 acres and permanent impacts to 44.9 acres of suitable giant garter snake upland habitat. Alternative 4 would impact the greatest amount of suitable giant garter snake aquatic and upland habitats of all the Project alternatives due to the larger footprint along the western transport channel and the inclusion of the north and south water control structures areas that provide suitable habitat.

The operations and maintenance effects of Alternative 4 on giant garter snake and its suitable aquatic and upland habitat would be the same as those described for Alternative 3, with the exception of additional managed flows of the north and south water control structures to provide juvenile fish rearing habitat. Alternative 4 would result in a greater extent of localized areas in the Yolo Bypass experiencing an increased average number of wet days of up to three to four weeks than Alternative 3.

The analysis of the potential significance of construction, operations, and maintenance effects of Alternative 4 on giant garter snake and its habitat is the same as that for Alternative 3.

#### *CEQA Conclusion*

Direct or indirect impacts to giant garter snake resulting from construction and maintenance of Alternative 4 would be **significant** because these activities could result in the mortality or injury of individuals and a reduction in the quantity and quality of suitable giant garter snake habitat. During operations, impacts would be **less than significant**.

Implementation of Mitigation Measures MM-TERR-2 through MM-TERR-6, MM-TERR-11 through MM-TERR-14, MM-WQ-1, and MM-WQ-2 would reduce the impacts of project construction, operations, and maintenance giant garter snake and its suitable aquatic and upland habitat to **less than significant**.

#### **9.3.3.5.4 Impact TERR-4: Potential Disturbance or Mortality of and Loss of Suitable Habitat for Western Pond Turtle**

Construction of Alternative 4 would result in temporary impacts to 25.9 acres and permanent impacts to 24.2 acres of suitable western pond turtle aquatic habitat. In addition, construction of Alternative 4 would result in temporary disturbance to 85.0 acres and permanent impacts to 90.4 acres of suitable western pond turtle upland habitat. Alternative 4 would have the greatest

impact to suitable aquatic and upland western pond turtle habitat of all the Project alternatives due to the larger footprint along the western transport channel.

In comparison to Alternative 3, which has the same general alignment but a smaller footprint, Alternative 4 would impact 37.9 more acres of suitable aquatic western pond turtle habitat (50.1 acres for Alternative 4 versus 12.2 acres for Alternative 3) and 84.1 more acres of suitable upland western pond turtle habitat (175.4 acres for Alternative 4 versus 91.3 acres for Alternative 3).

The analysis of the potential significance of construction-related direct and indirect effects of Alternative 4 on western pond turtle and its suitable habitat is the same as that for Alternative 3.

The operations and maintenance effects of Alternative 4 would be the same as those described for Alternative 3, with the exception of additional managed flows of the north and south water control structures to provide juvenile fish rearing habitat. The Lead Agencies do not expect these additional managed flows to result in adverse effects on western pond turtle or its habitat. Therefore, the impacts would be similar to those from Alternative 3.

#### *CEQA Conclusion*

Direct and indirect impacts to western pond turtle resulting from construction and maintenance of Alternative 4 would be **significant** because these activities could result in the mortality or injury of individuals and a reduction in the quantity and quality of suitable western pond turtle aquatic habitat and upland habitat. During operations, there would be **no impact**.

Implementation of Mitigation Measures MM-TERR-2 through MM-TERR-6, MM-TERR-11, MM-TERR-15, MM-WQ-1, and MM-WQ-2 would reduce construction, operations, and maintenance impacts to western pond turtle and its suitable habitat to **less than significant**.

#### **9.3.3.5.5 Impact TERR-5: Potential Disturbance or Mortality of Nesting Bird Species and Removal of Suitable Nesting and Foraging Habitat**

Construction effects of Alternative 4 on State- and/or Federally listed bird species, including Swainson's Hawk, Least Bell's Vireo, Western Yellow-Billed Cuckoo, and Bank Swallow, and on other special-status bird species that are known or have the potential to occur in the construction study area, including bird species protected by the MBTA, would include temporary impacts to 138.8 acres of suitable nesting and foraging habitat and permanent impacts to 146.0 acres of suitable nesting and foraging habitat for these species (Table 9-6). Alternative 4 would temporarily impact 105.5 more acres than Alternative 3 (138.8 acres for Alternative 4 versus 33.3 acres for Alternative 3) and would permanently impact 64.3 more acres than Alternative 3 (146.0 acres for Alternative 4 versus 81.7 acres for Alternative 3) of suitable nesting and foraging habitat. Impacts to riparian habitat (black willow thicket, box elder forest, Fremont cottonwood forest, mixed hardwood forest, and valley oak woodland) would be considered long-term temporary impacts because it would take more than one year to establish dominant tree vegetation, which would represent a temporal loss of habitat for special-status nesting birds.

The analysis of the potential significance of construction-related direct and indirect effects of Alternative 4 on nesting bird species and their suitable nesting and foraging habitat is the same as that for Alternative 3.

The operations and maintenance effects of Alternative 4 on nesting bird species would be the same as those described for Alternative 3.

*CEQA Conclusion*

Direct and indirect impacts on nesting bird species resulting from construction and maintenance of Alternative 4 would be **significant** because these activities could result in the mortality, injury, or disturbance of individuals or eggs and a reduction in the quantity and quality of suitable nesting and foraging habitat. Under operations, impacts would be **less than significant**.

Implementation of Mitigation Measures MM-TERR-2 through MM-TERR-6, MM-TERR-11, and MM-TERR-16 would reduce construction and maintenance impacts to nesting bird species and their suitable nesting and foraging habitat to **less than significant**.

**9.3.3.5.6 Impact TERR-6: Potential Disturbance, Injury, or Mortality of Special-Status Tree-Roosting Bats and Removal of Roosting Habitat**

Construction effects of Alternative 4 on special-status bat species, potentially including pallid bats and western red bats, would include temporary impacts to 20.6 acres of suitable riparian habitat and 72.3 acres of suitable grassland and open-water roosting and foraging habitat. In addition, construction effects would include the loss of 24.7 acres of suitable riparian habitat and conversion of 68.6 acres of suitable grassland and open-water foraging habitat to primarily open-water habitat that is still suitable for foraging (Table 9-6). Alternative 4 would have the highest construction impacts to suitable roosting and foraging habitat for special-status bat species of all the Project alternatives. Alternative 4 would temporarily impact 63.7 more acres of suitable roosting and foraging habitat than Alternative 3 (92.9 acres for Alternative 4 versus 29.2 acres for Alternative 3) and permanently impact 29.6 more acres of suitable roosting and foraging habitat than Alternative 3 (93.3 acres for Alternative 4 versus 63.7 acres for Alternative 3). Impacts to riparian habitat (black willow thicket, box elder forest, Fremont cottonwood forest, mixed hardwood forest, and valley oak woodland) would be considered long-term temporary impacts because it would take more than one year to establish dominant tree vegetation, which would represent a temporal loss of habitat for special-status tree-roosting bats.

The analysis of the potential significance of construction-related direct and indirect effects of Alternative 4 on special-status bat species and their suitable roosting habitat is the same as that for Alternative 3.

The operations and maintenance effects of Alternative 4 on special-status bat species and their suitable roosting habitat would be the same as those described for Alternative 3.

*CEQA Conclusion*

Direct and indirect impacts to special-status tree-roosting bats, including pallid bats and western red bats, resulting from construction and maintenance of Alternative 4 would be **significant** because these activities could result in the mortality, injury, or disturbance of individuals and a reduction in the quantity and quality of suitable or occupied habitat. During operations, there would be **no impact**.

Implementation of Mitigation Measures MM-TERR-2 through MM-TERR-6, MM-TERR-11, and MM-TERR-17 would reduce construction and maintenance impacts to special-status bat species and their suitable roosting habitat to **less than significant**.

#### **9.3.3.5.7 Impact TERR-7: Potential Disturbance or Mortality of American Badger and Loss of Its Habitat**

Construction effects of Alternative 4 on suitable American badger foraging and denning habitat would include temporary impacts to 64.4 acres and permanent impacts to 65.7 acres of potentially suitable grassland habitat (Table 9-6.). Alternative 4 would have the highest construction-related temporary impacts to suitable foraging and denning habitat and the second-highest construction-related permanent impacts to suitable foraging and denning habitat for American badger of all the Project alternatives. Alternative 4 would temporarily impact 44.8 more acres than Alternative 3 (64.4 acres for Alternative 4 versus 19.6 acres for Alternative 3) and permanently impact 22.9 more acres than Alternative 3 (65.7 acres for Alternative 4 versus 42.8 acres for Alternative 3) of suitable foraging and denning habitat for American badger.

The analysis of the potential significance of construction-related direct and indirect effects of Alternative 4 on American badger and its suitable foraging and denning habitat is the same as that for Alternative 3.

The operations and maintenance effects of Alternative 4 on American badger and its suitable foraging and denning habitat would be the same as those described for Alternative 3.

#### *CEQA Conclusion*

Direct and indirect impacts to American badger resulting from construction of Alternative 4 would be **significant** because construction activities could result in injury or mortality. During operations and maintenance, there would be **no impact**.

Implementation of Mitigation Measures MM-TERR-2 through MM-TERR-6 and MM-TERR-18 would reduce construction impacts to American badger and its suitable foraging and denning habitat to **less than significant**.

#### **9.3.3.5.8 Impact TERR-8: Potential Loss of Sensitive Natural Communities**

Construction effects of Alternative 4 on sensitive natural communities would include temporary impacts to 22.2 acres and permanent impacts to 34.0 acres of California hardstem and bulrush marsh, black willow thickets, box elder forest, Fremont cottonwood forest, mixed hardwood forest, and valley oak woodland (Table 9-6). Alternative 4 would have the highest construction impacts to sensitive natural communities of all the Project alternatives. Alternative 4 would temporarily impact 11.8 more acres than Alternative 3 (22.2 acres for Alternative 4 versus 10.4 acres for Alternative 3) and permanently impact 4.7 more acres than Alternative 3 (34.0 acres for Alternative 4 versus 29.3 acres for Alternative 3) of sensitive natural communities.

The analysis of the potential significance of construction-related direct and indirect effects of Alternative 4 on sensitive natural communities is the same as that for Alternative 3.

The operations and maintenance effects of Alternative 4 would be the same as those described for Alternative 3.

*CEQA Conclusion*

Direct and indirect impacts to sensitive natural communities, including freshwater marsh, riparian forest, and riparian woodland, resulting from construction of Alternative 4 would be **significant** because these activities could conflict with the implementation of general and/or conservation plan policies related to the protection of terrestrial biological resources. During operations and maintenance, there would be **no impact**.

Implementation of Mitigation Measures MM-TERR-2, MM-TERR-3, MM-TERR-5, MM-TERR-6, MM-TERR-11, MM-WQ-1, and MM-WQ-2 would reduce construction impacts to sensitive natural communities to **less than significant**.

**9.3.3.5.9 Impact TERR-9: Potential Effects on USACE, CDFW, and RWQCB Jurisdictional Wetland, Waters, and Riparian Areas**

Impacts to potential USACE and CDFW jurisdiction resulting from construction of Alternative 4 are shown in Figures 9-9a through 9-9h. Construction effects of Alternative 4 would include temporary impacts to 27.1 acres of potential USACE wetlands and 7.9 acres of potential non-wetland waters of the United States and permanent impacts to 28.2 acres of potential USACE wetland and 3.0 acres of potential non-wetland waters of the United States. In addition, construction of Alternative 4 would result in temporary impacts to 47.7 acres of potential CDFW riparian habitat, 7.9 acres of potential CDFW unvegetated streambed, permanent impacts to 52.9 acres of potential CDFW riparian habitat, and 3.0 acres of potential CDFW unvegetated streambed (Table 9-9. and Table 9-10). Alternative 4 would have the highest construction impacts to potential USACE wetlands and CDFW riparian habitat of all the Project alternatives. Compared to Alternative 3, Alternative 4 would temporarily impact 31 more acres of USACE jurisdiction (35.0 acres for Alternative 4 versus 4.0 acres for Alternative 3) and 42.8 more acres of CDFW jurisdiction (55.6 acres for Alternative 4 versus 12.8 acres for Alternative 3). In addition, Alternative 4 would permanently impact 16.3 more acres of USACE jurisdiction (31.2 acres for Alternative 4 versus 14.9 acres for Alternative 3) and 20.9 more acres of CDFW jurisdiction (55.9 acres for Alternative 4 versus 35.0 acres for Alternative 3).

The analysis of the potential significance of construction- and operations-related direct and indirect effects of Alternative 4 on potential USACE, CDFW, and RWQCB jurisdictional areas is the same as that for Alternative 3.

The operations and maintenance effects of Alternative 4 on potential USACE, CDFW, and RWQCB jurisdictional areas would be the same as those described for Alternative 3.



Figure 9-9a. Alternative 4 Construction Impacts to Potential USACE and CDFW Jurisdictional Areas

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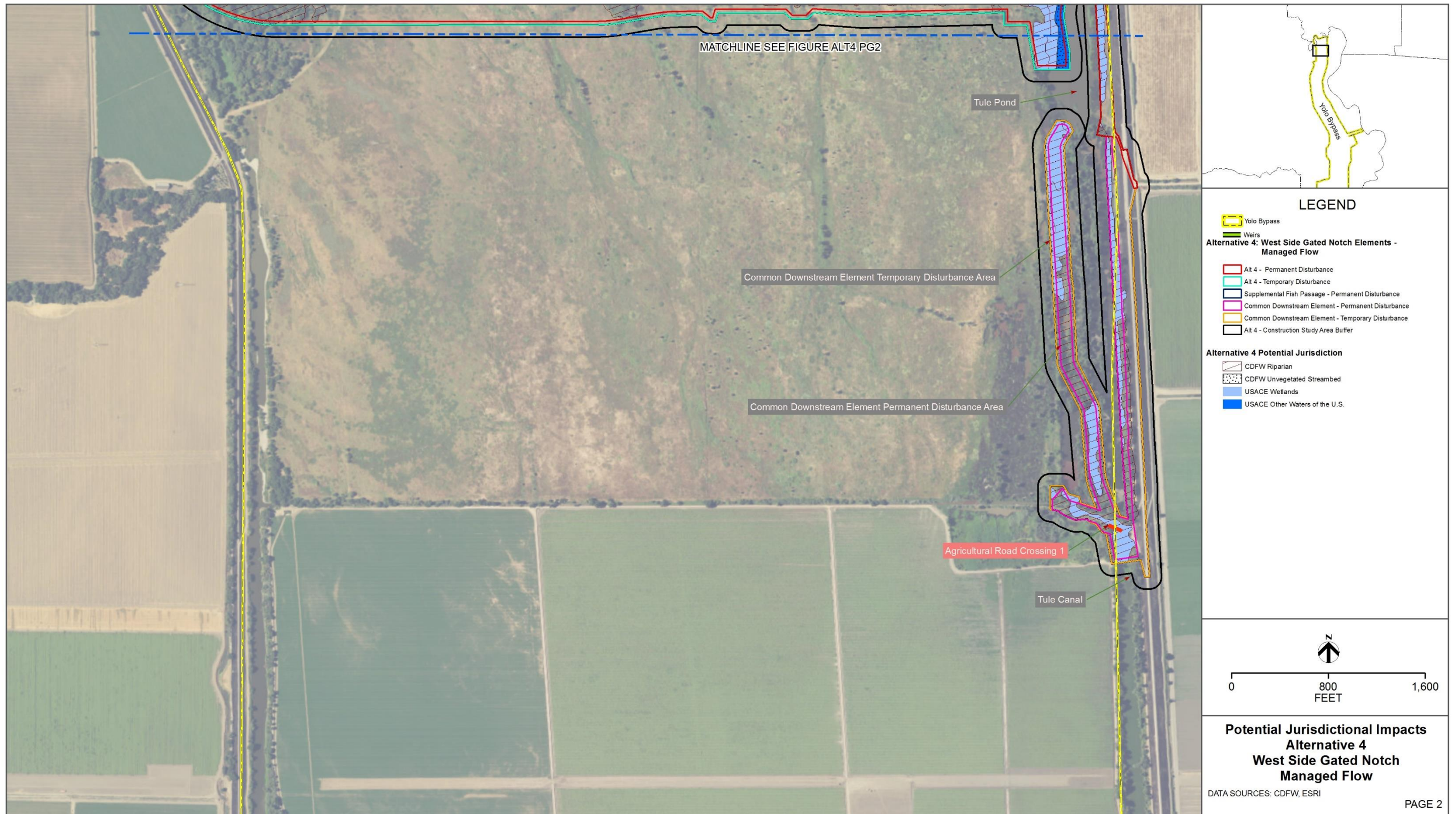


Figure 9-9b. Alternative 4 Construction Impacts to Potential USACE and CDFW Jurisdictional Areas

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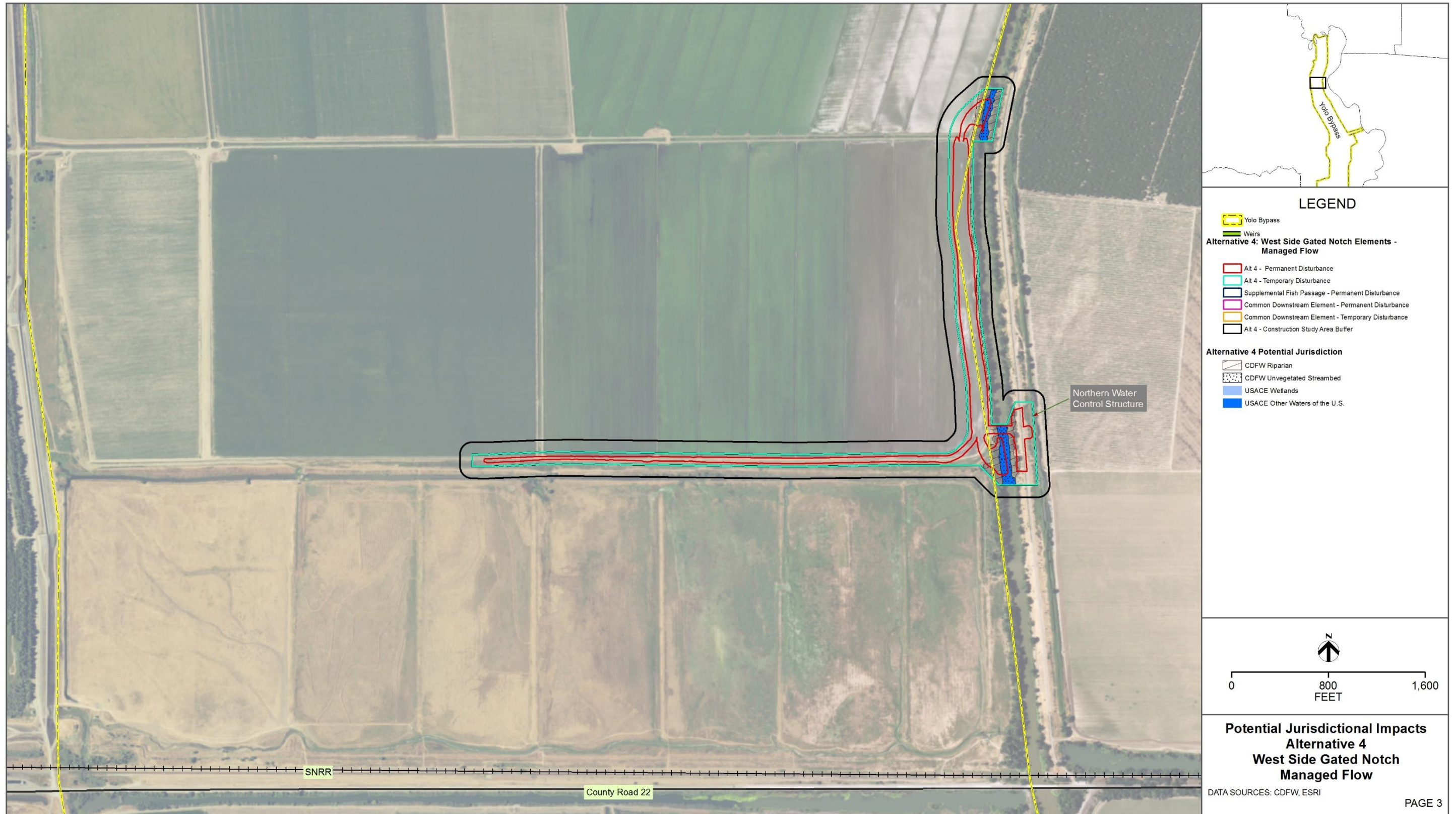


Figure 9-9c. Alternative 4 Construction Impacts to Potential USACE and CDFW Jurisdictional Areas

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Figure 9-9d. Alternative 4 Construction Impacts to Potential USACE and CDFW Jurisdictional Areas

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Figure 9-9e. Alternative 4 Construction Impacts to Potential USACE and CDFW Jurisdictional Areas

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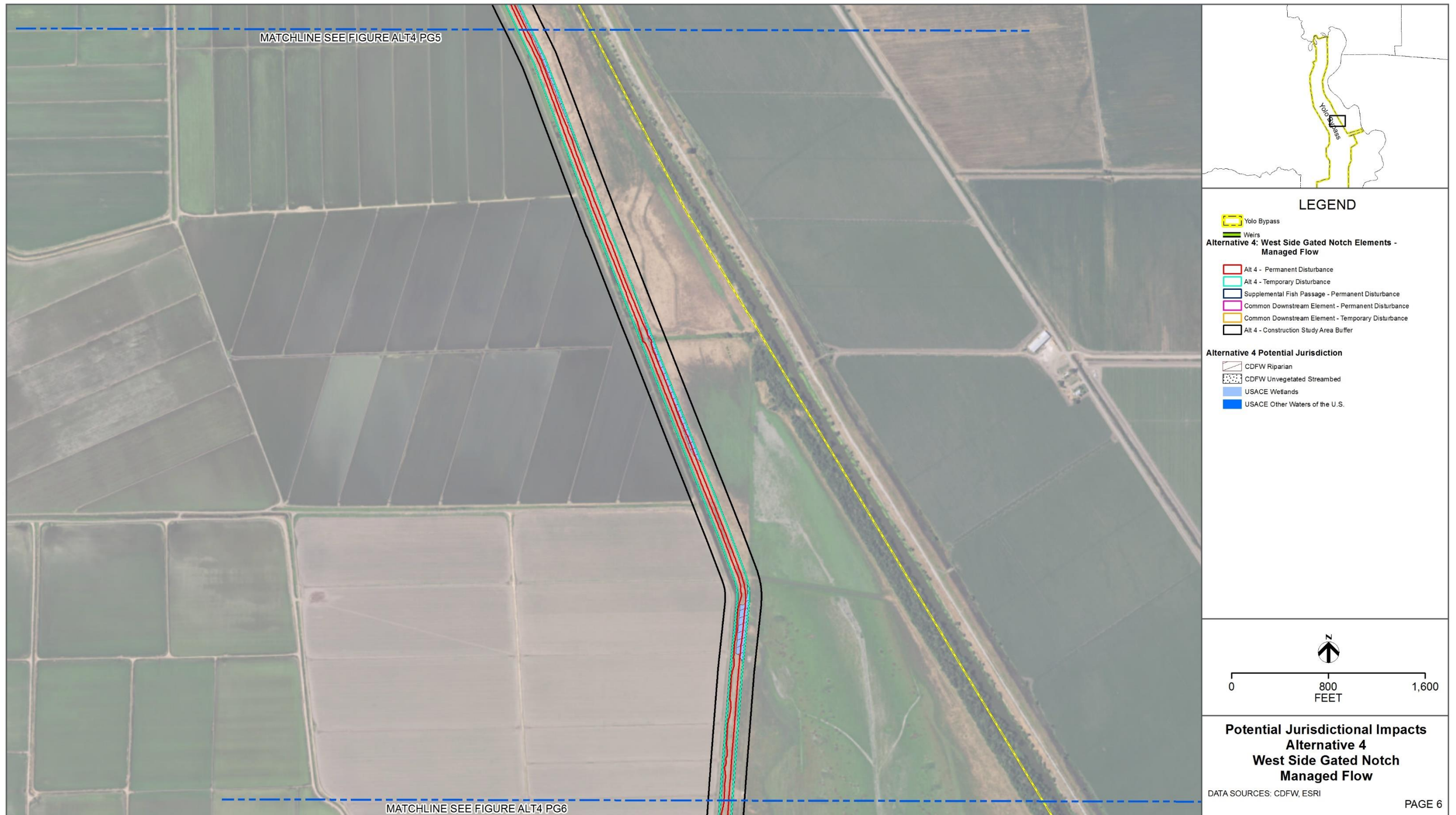


Figure 9-9f. Alternative 4 Construction Impacts to Potential USACE and CDFW Jurisdictional Areas

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Figure 9-9g. Alternative 4 Construction Impacts to Potential USACE and CDFW Jurisdictional Areas

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Figure 9-9h. Alternative 4 Construction Impacts to Potential USACE and CDFW Jurisdictional Areas

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