

4.5 BIOLOGICAL RESOURCES

The purpose of this section is to analyze the potential effects of the Proposed Action and Alternatives on biological resources including wildlife and habitats, federally-listed species, migratory birds, and jurisdictional “waters of the U.S.” The analysis of potential effects was based on the biological setting as determined from field surveys conducted by the Huffman-Broadway Group and Analytical Environmental Services (AES) in 2004, by consultation with the U.S. Fish and Wildlife Service (USFWS), and by reviewing known literature and metadata, including the California Department of Fish and Game (DFG) California Natural Diversity Database (CNDDDB).

The project area in the vicinity of the Wilfred and Stony Point sites is located within the Santa Rosa Plain, which encompasses much of central Sonoma County, and is characterized by vernal pools, seasonal wetlands, and associated grasslands. These habitats support a unique population of the federally listed endangered California tiger salamander (*Ambystoma californiense*), and three federally listed endangered plant species that have a large proportion of their population on the Plain. The Santa Rosa Plain Conservation Strategy (Conservation Strategy) and recently-released 2007 Programmatic Biological Opinion (“Programmatic Biological Opinion for U.S. Army Corps of Engineers Permitted Projects that May Affect California Tiger Salamander and Three Endangered Plant Species on the Santa Rosa Plain, California”) was crafted during the period from 2005-2007 by the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), and interested stakeholders to allow some development to continue, and to specifically preserve habitat for the three listed plant and animal species. The 2007 Programmatic Biological Opinion streamlines applications for Corps permits for both federal and non-federal applicants. An Implementation Plan for the Conservation Strategy is in preparation. Consultation with the USFWS was initiated by the National Indian Gaming Commission in July 2007. A Biological Opinion (BO) was issued by the USFWS on February 3, 2009 (**Appendix JJ**).

4.5.1 ALTERNATIVE A – PROPOSED PROJECT

Potential Effects to Wildlife and Habitats

Development of wastewater treatment options for Alternative A would affect habitats that are utilized by wildlife species. **Table 4.5-1 - Table 4.5-3** provide a summary of the acreage of each habitat type that would be affected under Alternative A. Wastewater treatment options for each alternative are summarized in **Table 2-2**. Development of Option 1 would impact 62.08 acres,

Option 2 would impact 68.42 acres and Option 3 would impact 83.88 acres. Most of the habitat disturbance resulting from the development of Alternative A would occur in cultivated fields, 60.83, 66.34 and 77.1 acres respectively for each option. Ground disturbance (such as grading) is a potentially significant impact to both resident and foraging wildlife. Mitigation is discussed in **Section 5.2.4** to reduce impacts to a less-than-significant level.

TABLE 4.5-1
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE A OPTION 1

Habitat Type	Acreage Affected	Percentage Affected (Based on 253 total acres)
California Annual Grassland	0	0%
Seasonal Pools and Wetlands	0.81	0.32%
Drainage Ditches	0.44	0.17 %
Irrigated Pasture	0	0%
Cultivated Fields	60.83	24.00%
Disturbed/Ruderal	0	0%
Total	62.08	24.54%

Source: The Huffman-Broadway Group, Inc., 2007.

TABLE 4.5-2
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE A OPTION 2

Habitat Type	Acreage Affected	Percentage Affected (Based on 253 total acres)
California Annual Grassland	0	0%
Seasonal Pools and Wetlands	1.60	0.63%
Drainage Ditches	0.48	0.19%
Irrigated Pasture	0	0%
Cultivated Fields	66.34	26.22%
Disturbed/Ruderal	0	0%
Total	68.42	27.04

Source: The Huffman-Broadway Group, Inc., 2007.

TABLE 4.5-3
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE A OPTION 3

Habitat Type	Acreage Affected	Percentage Affected (Based on 253 total acres)
California Annual Grassland	4.41	1.74%
Seasonal Pools and Wetlands	1.60	0.63%
Drainage Ditches	0.77	0.30%
Irrigated Pasture	0	0%
Cultivated Fields	77.1	30.47%
Disturbed/Ruderal	0	0%
Total	83.88	33.14

Source: The Huffman-Broadway Group, Inc., 2007.

Federally-listed Species

The following discussion evaluates the potential direct effects Options 1-3 may have on each federally-listed species with a potential to be affected by activities within the Wilfred site. Habitat for two federally Endangered plant species, the Sonoma sunshine and Burke's goldfields, has been documented in historical records in the vicinity of Options 1-3 (see **Section 3.5** for full discussion).

Formal consultation with the USFWS under Section 7 of the Endangered Species Act was initiated in July 2007. A Biological Opinion issued in February 2009 constitutes the final determination of impacts to federally-listed species that are the subject of the Biological Opinion (**Appendix JJ**).

Special-status Plant Species

The implementation of either Option 1, 2 or 3 would have no direct effect on the recently-discovered population of Sonoma sunshine, nor would these options have any affect on the area of historical occurrence of Sonoma sunshine and Burke's goldfields mapped in the CNDDDB. Option 1 would impact 0.81 acres of seasonal wetlands and Options 2 and 3 would impact 1.60 acres of seasonal wetlands that provide potentially suitable habitat for the listed plant species of the Santa Rosa Plain. Species-specific surveys were conducted in this area of impact (see **Section 3.5.4**). None of the listed plants was observed. Therefore, impacts to special status plant species would be less than significant. Nonetheless, mitigation is required by the Santa Rosa Plain Conservation Strategy. Mitigation for the impact to occupied and/or suitable habitat for the endangered plants is recommended in **Section 5.2.4**.

California Tiger Salamander (CTS)

Based on the 2004 protocol-level surveys, it is likely that CTS occurs on the Wilfred site. All areas that would be graded to support the gaming facility are considered aestivation habitat for the CTS. As such, impacts to aestivation habitat would occur throughout the development footprint for each of the options. The USFWS considers that habitat areas used for sprayfields would be altered to the extent that CTS cannot utilize such areas effectively. Because floodplains are not considered suitable CTS habitat, only the proposed sprayfields outside of the floodplain are considered to have impacts to CTS aestivation habitat. Additional impacts to the CTS that may occur with grading and development activities include the direct impacts to salamanders by earth moving activities, infrastructure improvements, building construction, landscaping and other construction. Other impacts from construction may occur due to disruption of surface movement, disruption of complete loss of reproduction, harassment from increased human

activity, and permanent and temporary loss of shelter. Additionally, night lighting practices in and around the construction areas may disrupt nocturnal movement patterns.

The potential for all options of Alternative A to impact acreage of CTS aestivation habitat is shown in **Table 4.5-4**. Development of Option 1 would result in impacts to 62.08-acres of CTS aestivation habitat, development of Option 2 would result in impacts to 68.42-acres of CTS aestivation habitat, and development of Option 3 would result in impacts to 82.17 acres of CTS aestivation habitat. The Programmatic Biological Opinion requires mitigation at a ratio of 3:1 for projects that are within 500 feet of a breeding site; 2:1 for projects that are greater than 500 feet and within 2200 feet of a known breeding site, and projects beyond 2200 feet from a known breeding site, but within 500 feet of an adult occurrence; and 1:1 for projects that are greater than 2200 feet and within 1.3 miles of a known breeding site. As most of the open space area is within the 100-year floodplain, little to no opportunity exists for setting aside CTS habitat within the on-site open space preserve. Therefore, CTS mitigation would be accomplished off-site.

TABLE 4.5-4
IMPACTS AND MITIGATION REQUIREMENTS FOR ALTERNATIVE A OPTIONS 1, 2 AND 3

Option	Approximate Acreage of Site (acres)	Impacts of Development to CTS Habitat (acres) (graded footprint and sprayfields)	Required CTS Mitigation (acres)	Approximate Ungraded On-Site Open Space Preserve (acres) (little to no CTS habitat)	Portion of Open Space to be used as Sprayfields (acres)	Wetland Preservation in On-Site Open Space Preserve (acres)
1	253	62.08	62.08	191	0.0	17.19
2	253	68.42	68.42	185	54.0	16.36
3	253	82.17	86.85	169	111.4	16.07

Source: The Huffman-Broadway Group, Inc., 2007; USFWS, 2009.

Under all three options, nearly the entire graded footprint is proposed in areas outside of the 100-year floodplain. Under Option 2 and Option 3, all areas of sprayfields are proposed within the floodplain. Therefore, nearly all the graded footprint is within areas considered as CTS habitat, and all of the proposed sprayfields are in areas not considered CTS habitat.

Development impacts on aestivation habitat for the CTS within the 66-acre portion of the Wilfred site contained in the Northwest Specific Plan have been previously evaluated in a Section 7 Biological Opinion (BO) for a different project. The USFWS issued a BO on August 5, 2005 related to a Section 7 consultation conducted as part of the USACE permit application process for a mixed use project (commercial, residential and light industrial) proposed by Redwood Equities, L.P. The BO is valid for a commercial project at the Wilfred site and has not expired as it is in response to a request made by the USACE for Section 7 consultation for an existing on-going permit application. The BO for the mixed use project requires mitigation for CTS aestivation

habitat at a ratio of 0.5:1. Discussions with USFWS have found that USFWS would consider an amendment to the existing BO as the means to obtain the requisite “take” authorization from the agency related to the CTS. The applicant has proposed to move mitigation for CTS aestivation habitat from the less stringent 0.5:1 ratio required in the previous BO to a more stringent 1:1 ratio subject to further Section 7 consultation with the USFWS. The USFWS issued a BO in February 2009 for the Preferred Alternative (Alternative A, Option 3) that requires mitigation at a 1:1 ratio for impacts to areas within 1.3 miles from extant or extirpated breeding pools and at a 2:1 ratio for impacts to areas within 500 feet of an adult occurrence.

Table 4.5-4 evaluates the mitigation requirements for Options 1-3 assuming a 1:1 ratio. Note that this assumption is made for all alternatives except for the Preferred Alternative, for which a USFWS BO has prescribed mitigation ratios. Mitigation requirements would range from 62.08-acres for Alternative A Option 1 to 86.85-acres for Alternative A Option 3. None of the mitigation would be accomplished on-site as most of the area available for open space dedication is within the 100-year floodplain and not considered suitable CTS habitat. All mitigation would be accomplished off-site and would consist of purchasing CTS credits from an approved mitigation bank or the purchase of farm land within known CTS habitat and placement of the land under conservation easement. Under the latter method, the purchased land would be placed in a conservation easement and subject to funding agreements and a long-term management program aimed at CTS conservation. Mitigation is further discussed in **Section 5.2.4**.

Special-status Fish Species

There are reports of steelhead fish occurring in Coleman Creek, which is upstream of the confluence of the Laguna de Santa Rosa and the Bellevue-Wilfred Channel (Entrix, 2004). Steelhead fish ostensibly migrate from the Russian River into the Laguna de Santa Rosa and Coleman Creek. The effects of the project’s treated wastewater discharges on this species include higher creek temperatures, eutrophication, and possible feminization of fish from endocrines in wastewater. These effects are described and referenced in the Effluent Study (**Appendix V**). It is unlikely, however, that the United States Environmental Protection Agency (USEPA) would allow discharge of effluent into the Laguna de Santa Rosa except during the winter months when Russian River flow is high (more than 1,000 cfs at the Hacienda Bridge), thus diluting constituent concentrations. Since effluent would be diluted with high flows in the Russian River, the impact of the project’s treated wastewater discharges on this species would be less than significant. Additionally, siltation of the Laguna de Santa Rosa from site grading could occur. However, adoption of Best Management Practices (BMPS) outlined in the project description (**Section 2.2.5**) including implementation of a stormwater pollution prevention plan (SWPPP) would eliminate siltation of the Laguna de Santa Rosa.

In a ten-year study of the Russian River drainage, the City of Santa Rosa reports that agricultural diversions and drought had the greatest impact on migrating and spawning salmonid fish (Santa Rosa, 2003; Merritt-Smith, 2003a, b). The City's study and the subsequent environmental impact reports (EIRs) (Santa Rosa, 2003, 2004b) reveal that discharges of tertiary treated wastewater into the Laguna de Santa Rosa in the winter months do not significantly impact biological resources, including threatened and endangered salmonid fish, amphibians, or invertebrates. The City of Santa Rosa's studies, including the subsequent EIR's are discussed in the context of the proposed project in the Effluent Study (**Appendix V**).

The Effluent Study (**Appendix V**) concludes that the general effects of tertiary treated wastewater discharges on salmonids of the Russian River system are negligible. Therefore, the effects of Alternative A on steelhead fish are considered less-than-significant due to the anticipated winter discharge requirement of the USEPA and the relatively insignificant constituent concentrations that will be contributed to the Russian River from the proposed wastewater treatment plant (Figure 8 of **Appendix V**). Nevertheless, Section 7 Consultation with National Oceanic and Atmospheric Administration (NOAA) Fisheries will be initiated if treated wastewater is discharged into the Laguna de Santa Rosa.

Migratory Birds and Other Federal Species of Concern

Several raptor species have the potential to utilize the site, primarily as foraging habitat. These species include the burrowing owl (also a species of federal concern), northern harrier, white-tailed kite, sharp-shinned hawk, Cooper's hawk and golden eagle. Winter use of the site by these species is possible, however, in all cases, with the exception of burrowing owl, appropriate nesting habitat does not appear to be present. A burrowing owl was observed at the site in January 2004. Subsequent surveys uncovered no evidence that the species used the site for nesting. Three raptors that may occur are designated as state species of special concern based on presence of wintering habitat (Ferruginous Hawk, Golden Eagle, and Merlin). Ferruginous Hawk is also a federal species of special concern. These species are wide-ranging species often wintering over a broad area, and incidental use of the site by these species, primarily during winter, is certainly possible. The site provides no unique features that would highlight the importance of the site as a wintering location for any of these species.

Nighttime lighting from the operation of the Proposed Project has a potentially significant impact on both migrating and local bird populations. Increased lighting has been shown to increase collisions of birds and structures, as well as causing a disorientation effect on species. Mitigation measures to reduce potentially significant nighttime lighting impacts are identified in **Section 5.2.4**.

Potential significant adverse direct effects to migratory birds and other special status species will be less-than-significant with implementation of the mitigation measures identified in **Section 5.2.4**.

Waters of the U.S.

A formal delineation of waters of the U.S. has been conducted on the Wilfred Site. An application has been submitted for an individual Department of the Army Permit for placement of fill into waters of the U.S. Issuance of the permit is pending.

Potential Effects to Wetlands

Under Alternative A, approximately 0.81-acres of seasonal pools and wetlands would be graded and filled by wastewater treatment Option 1, and approximately 1.6-acres would be graded and filled by wastewater treatment Options 2 and 3. Seasonal pools and wetlands constitute habitat for both aquatic and terrestrial wildlife including insects, amphibians, reptiles, birds and small mammals. Grading of the topsoil and herbaceous layer of native and introduced vegetation would remove primary decomposers and producers thus disrupting the food chain leading to the aquatic and terrestrial organisms. This is a significant impact.

Potential Effects to Drainages

The proposed development of Option 1 would impact 0.44-acres, Option 2 would impact 0.48-acres and development of Option 3 would impact 0.77-acres of drainages. The floor and sides of the ditch where the treated wastewater outfall structure is proposed are vegetated with weedy species. Flowing water and aquatic life were absent when viewed on June 9, 2004. The addition of a permanent water source along the ditch would stimulate the growth of hydrophytes, and ultimately create conditions for the growth of hydrophytic vegetation. This is a potentially significant, but beneficial impact. No mitigation is required.

A formal delineation identified 18.44-acres of “waters of the U.S.” on the Wilfred site. These features are subject to USACE jurisdiction under the Clean Water Act (CWA) and any discharge of dredged or fill material within the “waters of the U.S.” would require a CWA, Section 404 permit. As discussed in the preceding paragraphs, anticipated direct effects to jurisdictional “waters of the U.S.” total 1.25-acres with the development of Option 1, 2.08-acres with the development of Option 2 and 2.37-acres with the development of Option 3. **Table 4.5-5- Table 4.5-7** summarize the impacts of all options for Alternative A. **Figure 4.5-1 - Figure 4.5-3** show the wetland impacts of each option. As noted in **Section 2.2.6**, a flood storage area would be created on the southern portion of the Wilfred site that would likely also result in the creation of wetlands.

Insert Figure 4.5-1

Insert Figure 4.5-2

Insert Figure 4.5-3

It is possible that these created wetlands will satisfy any mitigation required by the Section 404 permit. However, in any case, the Tribe would be required to comply with any requirements contained in the CWA Section 404 permit. Mitigation measures are identified in **Section 5.2.4**.

TABLE 4.5-5
ANTICIPATED DIRECT EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE A OPTION 1

Wetland Feature	Acreage Affected
Seasonal Ponds and Wetlands	0.81
Drainage Ditches	0.44
Total	1.25

Source: The Huffman-Broadway Group, Inc., 2007.

TABLE 4.5-6
ANTICIPATED DIRECT EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE A OPTION 2

Wetland Feature	Acreage Affected
Seasonal Ponds and Wetlands	1.60
Drainage Ditches	0.48
Total	2.08

Source: The Huffman-Broadway Group, Inc., 2007.

TABLE 4.5-7
ANTICIPATED DIRECT EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE A OPTION 3

Wetland Feature	Acreage Affected
Seasonal Ponds and Wetlands	1.60
Drainage Ditches	0.77
Total	2.37

Source: The Huffman-Broadway Group, Inc., 2007.

4.5.2 ALTERNATIVE B – NORTHWEST STONY POINT CASINO

Potential Effects to Wildlife and Habitats

Development of wastewater treatment options for Alternative B would affect habitats that are utilized by wildlife species. **Table 4.5-8** and **Table 4.5-9** provide a summary of the acreage of each habitat type that would be affected under Alternative B. Wastewater treatment options for each alternative are summarized in **Table 2-2**. Development of Option 1 would impact 82.55 acres; Option 2 would impact 99.17 acres. Most of the habitat disturbance resulting from the development of Alternative B, Option 1, would occur in Irrigated Pasture (48.22 acres) and Seasonal Pools and Wetlands (21.14-acres). Most of the habitat disturbance resulting from the development of Alternative B, Option 2, would also occur in Irrigated Pasture (48.22 acres) and Seasonal Pools and Wetlands (26.43-acres). Ground disturbance such as grading is a potentially significant impact to both resident and foraging wildlife. Mitigation is discussed in **Section 5.2.4**.

TABLE 4.5-8
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE B OPTION 1

Habitat Type	Acreage Affected	Percentage Affected (Based on 360 total acres)
California Annual Grassland	0	0%
Seasonal Pools and Wetlands	21.14	5.87%
Drainage Ditches	0.73	0.20%
Irrigated Pasture	48.22	13.39%
Cultivated Fields	4.8	1.33%
Disturbed/Ruderal	7.66	2.12%
Total	82.55	22.91

Source: The Huffman-Broadway Group, Inc., 2007.

TABLE 4.5-9
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE B OPTION 2

Habitat Type	Acreage Affected	Percentage Affected (Based on 360 total acres)
California Annual Grassland	0.02	<0.1%
Seasonal Pools and Wetlands	26.43	7.34%
Drainage Ditches	0.73	0.20%
Irrigated Pasture	48.22	13.39%
Cultivated Fields	16.11	4.48%
Disturbed/Ruderal	7.66	2.12%
Total	99.17	27.54

Source: The Huffman-Broadway Group, Inc., 2007.

Federally-listed Species

Options 1 and 2 would directly impact 1.38 acres of occupied habitat for two federally Endangered plant species: Sonoma sunshine and Burke's goldfields. Habitat for these species has been documented in historical records on a portion of the site, adjacent to Stony Point Road along the site boundary, including a portion of the irrigated pasture to be impacted by Alternative B. The agricultural areas of the Stony Point site are within the Santa Rosa Plain Conservation Area for the federally-listed CTS. More detailed discussion of the impacts of Options 1 and 2 appear below.

Special-status Plant Species

The grading footprint of Options 1 and 2 would directly impact approximately 1.38 acres of habitat that is known to have historically supported two federally Endangered Species, Sonoma sunshine and Burke's goldfields. Furthermore, surveys conducted in 2005 and 2007 found Sonoma sunshine present at the Stony Point site. The entire 1.38-acres of habitat is assumed to contain seed banks for the two species. Impacts to 1.38-acres of Sonoma sunshine and Burke's

goldfields habitat and seed bank constitute a significant impact. Mitigation is outlined in **Section 5.2.4**.

California Tiger Salamander (CTS)

It is likely that CTS occurs on the 360-acre Stony Point site. Impacts to CTS are likely to occur from development of Alternative B. The CTS retreats to upland refugial sites after breeding; sometimes at distances greater than a mile away from breeding ponds. Impacts to refugial or aestivation habitat could result from development of uplands within any portion of the project site. All areas that would be graded to support the gaming facility are considered aestivation habitat for the California tiger salamander. As such, impacts to aestivation habitat would occur throughout the development footprint for each of the options. The USFWS considers that habitat areas used as sprayfields would be altered such that CTS cannot utilize such areas effectively. Because floodplains are not considered suitable CTS habitat, only the proposed sprayfields outside of the floodplains are considered to have impacts to CTS aestivation habitat. Additional impacts to the CTS may occur with grading and development activities that include the potential for direct impacts to salamanders by earth moving activities, infrastructure improvements, building construction, landscaping and other construction. Other impacts from construction may occur due to possible disruption of surface movement, disruption to or complete loss of reproduction, harassment from increased human activity, and permanent and temporary loss of shelter. Additionally, lighting practices in and around construction areas may disrupt nocturnal movement patterns.

Table 4.5-10 shows the acreage that would be considered impacted from the standpoint of CTS aestivation habitat through development of the project footprint of both options for Alternative B. The Programmatic Biological Opinion requires mitigation at a ratio of 3:1 for projects that are within 500 feet of a breeding site; 2:1 for projects that are greater than 500 feet and within 2200 feet of a known breeding site, and projects beyond 2200 feet from a known breeding site but within 500 feet of an adult occurrence; and 1:1 for projects that are greater than 2200 feet and within 1.3 miles of a known breeding site. As most of the open space area is within the 100-year floodplain, little to no opportunity exists for setting aside CTS habitat within the on-site open space preserve. Therefore, CTS mitigation would be accomplished off-site. The CTS mitigation requirement for each option is summarized in **Table 4.5-10**.

TABLE 4.5-10
MITIGATION REQUIREMENTS FOR ALTERNATIVE B OPTIONS 1 AND 2

Option	Approximate Acreage of Site (acres)	Impacts of Development to CTS Habitat (acres) (graded footprint and sprayfields)	Required CTS Mitigation (acres)	Approximate Ungraded On-Site Open Space Preserve (acres) (little to no CTS habitat)	Portion of Open Space to be used as Sprayfields (acres)	Wetland Preservation in on site Open Space Preserve (acres)
1	360	83.97	151.00	277	78.0	39.75
2	360	100.43	167.46	261	111.4	34.46

Source: The Huffman-Broadway Group, Inc., 2007.

Development of Option 1 under Alternative B would result in impacts to 83.97-acres of CTS aestivation habitat (**Table 4.5-10**). Development of Option 2 would result in impacts to 100.43 acres. Under both options, part of the graded footprint is proposed in areas outside of the 100-year floodplain. Also under both options, parts of the proposed sprayfields are within the floodplain. The parts of the graded footprint and sprayfields that are outside of floodplain are considered CTS habitat. All areas of impact to CTS habitat are between 2200 feet and 1.3 miles from the nearest known breeding location. All impacted areas in these alternatives would therefore require mitigation at a ratio of 1:1. Mitigation is further discussed in **Section 5.2.4**.

Special-status Fish Species

There are reports of steelhead fish occurring in Coleman Creek, which is upstream of the confluence of the Laguna de Santa Rosa and the Bellevue-Wilfred Channel (Entrix, 2004). Steelhead fish ostensibly migrate from the Russian River into the Laguna de Santa Rosa and Coleman Creek. The effects of the project's treated wastewater discharges on this species include higher creek temperatures, eutrophication, and possible feminization of fish from endocrines in wastewater. These effects are described and referenced in the Effluent Study (**Appendix V**). It is unlikely, however, that the EPA would allow discharge of effluent into the Laguna de Santa Rosa except during the winter months when Russian River flow is high (more than 1,000 cfs at the Hacienda Bridge), thus diluting constituent concentrations. Since effluent would be diluted with high flows in the Russian River, the impact of the project's treated wastewater discharges on this species would be less than significant. Additionally, siltation of the Laguna de Santa Rosa from site grading could occur. However, adoption of BMPs outlined in the project description (**Section 2.2.5**) including implementation of a stormwater pollution prevention plan (SWPPP) would eliminate siltation of the Laguna de Santa Rosa.

In a ten-year study of the Russian River drainage, the City of Santa Rosa reports that agricultural diversions and drought had the greatest impact on migrating and spawning salmonid fish (Santa

Rosa, 2003; Merritt-Smith, 2003a, b). The City's study and the subsequent EIRs (Santa Rosa, 2003, 2004b) reveal that discharges of tertiary treated wastewater into the Laguna de Santa Rosa in the winter months do not significantly impact biological resources, including threatened and endangered salmonid fish, amphibians, or invertebrates. The City of Santa Rosa's studies, including the subsequent EIR's are discussed in the context of the proposed project in the Effluent Study (**Appendix V**).

The Effluent Study (**Appendix V**) concludes that the general effects of tertiary treated wastewater discharges on salmonids of the Russian River system are negligible. Therefore, the effects of Alternative A on steelhead fish are considered less-than-significant due to the anticipated winter discharge requirement of the USEPA and the relatively insignificant constituent concentrations that will be contributed to the Russian River from the proposed wastewater treatment plant (**Figure 8 of Appendix V**). Nevertheless, Section 7 Consultation with NOAA Fisheries will be initiated if treated wastewater is discharged into the Laguna de Santa Rosa.

Migratory Birds and Other Federal Species of Concern

The development of Alternative B would affect tall grasses and weedy vegetation that could potentially support active bird species that may not include western burrowing owl, and tricolored blackbird (nests), and foraging federal Species of Concern including northern harrier, white-tailed kite, sharp-shinned hawk, Cooper's hawk, ferruginous hawk, golden eagle, merlin, California-horned lark, loggerhead shrike, and yellow warbler. According to the federal Migratory Bird Treaty Act foraging migratory birds and their nests are protected from "take".

Alternative B could adversely affect active migratory bird nests located at ground-level or in tall weeds if vegetation removal activities associated with project construction occur during the nesting season. This is a potentially significant impact. Likewise, mass grading the footprints of Option 1 and 3 would eliminate upland basking sites for the western pond turtle. Potential adverse direct effects to migratory birds and other special status species will be less-than-significant with implementation of the mitigation measures identified in **Section 5.2.4**.

Nighttime lighting of the operation of Alternative B has a potentially significant impact on migrating and local bird populations. Increased lighting has been shown to increase collisions of birds and structures, as well as causing a disorientation effect on many species. Mitigation measures to reduce potentially significant nighttime lighting impacts are identified in **Section 5.2.4**.

Waters of the U.S.***Potential Effects to Wetlands***

Under Alternative B, the implementation of Option 1 would impact 21.14-acres of seasonal pools and wetlands (**Table 4.5-11**). Option 2 would impact 26.43-acres of seasonal pools and wetlands (**Table 4.5-12**). Seasonal pools and wetlands constitute habitat for both aquatic and terrestrial wildlife including insects, amphibians, reptiles, birds and small mammals. Grading of the topsoil and herbaceous layer of native and introduced vegetation would remove primary decomposers and producers thus disrupting the food chain leading to aquatic and terrestrial organisms. This is a significant impact. Mitigation is discussed in **Section 5.2.4**.

A formal delineation identified more than 61.77-acres of “waters of the U.S.” on the Stony Point site. These features are subject to USACE jurisdiction under the Clean Water Act and any discharge of dredged or fill material within the “waters of the U.S.” would require a Clean Water Act, Section 404 permit. Development of Option 1 would impact 21.87-acres of “waters of the U.S.”; development of Option 2 would impact 27.16-acres of “waters of the U.S.” (**Figure 4.5-4; Figure 4.5-5; Table 4.5-11; Table 4.5-12**). This is a significant impact. However, as noted in **Section 2.3.6**, a flood storage area would be created on the southern portion of the Stony Point site that would likely also result in the creation of wetlands. It is possible that these created wetlands will satisfy any mitigation required by the Section 404 permit. However, in any case, the Tribe would be required to comply with any requirements contained in the CWA Section 404 permit. Mitigation measures are identified in **Section 5.2.4**.

TABLE 4.5-11
ANTICIPATED DIRECT EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE B OPTION 1

Wetland Feature	Acreage Affected
Seasonal Ponds and Wetlands	21.14
Drainage Ditches	0.73
Total	21.87

Source: The Huffman-Broadway Group, Inc., 2007.

TABLE 4.5-12
ANTICIPATED DIRECT EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE B OPTION 2

Wetland Feature	Acreage Affected
Seasonal Ponds and Wetlands	26.43
Drainage Ditches	0.73
Total	27.16

Source: The Huffman-Broadway Group, Inc., 2007.

Insert Figure 4.5-4

Insert Figure 4.5-5

Potential Effects to Drainages

The proposed development of Options 1 and 2 would impact 0.73-acres of drainages. There is no ecological value to the weeds on the floor and sides of the ditch where the proposed wastewater outfall would be located; therefore, impacts would be less than significant. Flowing water and aquatic life were absent when viewed on June 9, 2004. The addition of a permanent water source along the ditch would stimulate the growth of hydrophytes, and ultimately create conditions for the growth of hydrophytic vegetation. This is a potentially significant, but beneficial impact; therefore, no mitigation is required.

4.5.3 ALTERNATIVE C – NORTHEAST STONY POINT CASINO*Potential Effects to Wildlife and Habitats*

Development of wastewater treatment options for Alternative C would affect habitats that are utilized by wildlife species. **Table 4.5-13** and **Table 4.5-14** provide a summary of the acreage of each habitat type that would be affected under Option 1 and 2. Wastewater treatment options for each alternative are summarized in **Table 2-2**. As shown in **Table 4.5-13**, Option 1 would affect approximately 26.44 percent of the 360-acres of habitat within the Stony Point site. Most of the habitat disturbance associated with Option 1 (70.91-acres) would occur in cultivated fields. As shown in **Table 4.5-14**, Option 2 would affect 30.65 percent of the approximately 360 acres of habitat within the Stony Point site. Most of the habitat disturbance associated with Option 2 would also occur in cultivated fields (67.99-acres). Grading is a potentially significant impact to both resident and foraging wildlife. Mitigation is discussed in **Section 5.2.4** to reduce impacts to less-than-significant levels.

TABLE 4.5-13
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE C OPTION 1

Habitat Type	Acreage Affected	Percentage Affected (Based on 360 total acres)
California Annual Grassland	1.65	0.46%
Seasonal Pools and Wetlands	21.79	6.05%
Drainage Ditches	0.49	0.14%
Irrigated Pasture	0	0%
Cultivated Fields	70.91	19.70%
Disturbed/Ruderal	0.34	0.09%
Total	95.18	26.44

Source: The Huffman-Broadway Group, Inc., 2007.

TABLE 4.5-14
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE C OPTION 2

Habitat Type	Acreage Affected	Percentage Affected (Based on 360 total acres)
California Annual Grassland	1.29	0.36%
Seasonal Pools and Wetlands	25.70	7.14%
Drainage Ditches	0.49	0.14%
Irrigated Pasture	14.17	3.94%
Cultivated Fields	67.99	18.89%
Disturbed/Ruderal	0.66	0.18%
Total	110.3	30.65%

Source: The Huffman-Broadway Group, Inc., 2007.

Federally-listed Species

The following discussion evaluates potential direct effects of Options 1 and 2 on federally-listed species within the Stony Point site. Historical records for two federally endangered species, Sonoma sunshine and Burke's goldfields, as well as a recent record of Sonoma sunshine, have been documented at the western end of the Stony Point site, adjacent to Stony Point Road. Under Options 1 and 2, only sprayfields and open space are proposed for the area in which these species have been documented. The agricultural areas of the Stony Point site are within the Santa Rosa Plain Conservation Area for the federally-listed California tiger salamander (CTS). More detailed discussion of the impacts of Options 1 and 2 appear below.

Special-status Plant Species

The grading footprint of Option 1 and 2 would directly impact approximately 21.79- and 25.70-acres of seasonal wetlands, respectively. This is a significant impact. Mitigation is outlined in **Section 5.2.4**.

The grading footprint of Options 1 and 2 would not directly impact known habitat for the site's two federally-listed plant species: Sonoma sunshine and Burke's goldfields. Installation of pipes and sprinklers for sprayfields would cause temporary impacts to approximately 1.38-acres of habitat for the two species. Operation of sprayfields could impact approximately 1.38-acres of habitat for the two species. Operation of sprayfields could cause the habitat to be wet year-round, rather than seasonal, giving a competitive advantage to non-native species such as Italian ryegrass (*Lolium multiflorum*). This is a potentially significant impact that would require mitigation as outlined in **Section 5.2.4**.

California Tiger Salamander

It is likely that California tiger salamander (CTS) occurs on the 360-acre Stony Point site. Impacts to CTS are likely to occur from development of Options 1 or 2. Impacts to the CTS would be similar to those identified in **Section 4.5.2, Alternative B**. This is a significant impact.

Table 4.5-15 shows the acreage that would be considered impacted from the standpoint of CTS aestivation habitat through development of the project footprint of both options for Alternative C. The Programmatic Biological Opinion requires mitigation at a ratio of 3:1 for projects that are within 500 feet of a breeding site; 2:1 for projects that are greater than 500 feet and within 2200 feet of a known breeding site, and projects beyond 2200 feet from a known breeding site, but within 500-feet of an adult occurrence; and 1:1 for projects that are greater than 2200 feet and within 1.3 miles of a known breeding site. As most of the open space area is within the 100-year floodplain, little to no opportunity exists for setting aside CTS habitat within the on-site open space preserve. Therefore, CTS mitigation would be accomplished off-site. The CTS mitigation requirement for each option is summarized in **Table 4.5-15**.

Development of Option 1 would result in impacts to 86.90-acres of CTS aestivation habitat (**Table 4.5-15**). Development of Option 2 would result in impacts to 98.30 acres. Under both options, part of the graded footprint is proposed in areas outside of the 100-year floodplain. Also under both options, parts of the proposed sprayfields are within the floodplain. The parts of the graded footprint and sprayfields that are outside of floodplain are considered CTS habitat. All areas of CTS habitat impact are between 2200 feet and 1.3 miles from the nearest known breeding location. All impacted areas in these alternatives would therefore require mitigation at a ratio of 1:1. Mitigation is further discussed in **Section 5.2.4**.

TABLE 4.5-15
MITIGATION REQUIREMENTS FOR ALTERNATIVE C OPTIONS 1 AND 2

Option	Approximate Acreage of Site (acres)	Impacts of Development to CTS Habitat (acres) (graded footprint and sprayfields)	Required CTS Mitigation (acres)	Approximate Unimpacted On-Site Open Space Preserve (little to no CTS habitat) (acres)	Portion of Open Space to be used as Sprayfields (acres)	Wetland Preservation in on site Open Space Preserve (acres)
1	360	86.90	152.25	259	78.0	38.19
2	360	98.30	162.59	238	111.4	31.70

Source: The Huffman-Broadway Group, Inc., 2007.

Special-status Fish Species

The general effects of tertiary treated wastewater discharges on steelhead trout and salmonids of the Russian River system are negligible according to the recent studies performed by fisheries biologists (Santa Rosa, 2003; Merritt-Smith, 2003a, b). The impacts to the Laguna de Santa Rosa under Alternative C variants are similar to impacts identified in **Section 4.5.2**. It is concluded that the effects of Options 1 and 2 on steelhead fish are less than significant. Nevertheless, if treated wastewater is discharged into the Laguna de Santa Rosa, Section 7 Consultation with NOAA Fisheries will be initiated.

Migratory Bird and Other Federal Species of Concern

The development of Options 1 and 2 would affect tall grass and weedy vegetation that could potentially support any active western burrowing owl and tricolored blackbird nests and provide foraging habitat for federal Species of Concern including the northern harrier, white-tailed kite, sharp-shinned hawk, Cooper's hawk, ferruginous hawk, golden eagle, merlin, California horned lark, loggerhead shrike, and yellow warbler. According to the federal Migratory Bird Treaty Act foraging migratory birds and their nests are protected from "take".

Nighttime lighting of the operation of Alternative C has a potentially significant impact on migrating and local bird populations. Increased lighting has been shown to increase collisions of birds and structures, as well as causing a disorientation effect on species. Mitigation measures to reduce potentially significant nighttime lighting impacts are identified in **Section 5.2.4**.

Options 1 and 2 could adversely affect active migratory bird nests located at ground level or in tall weeds if vegetation removal activities associated with project construction occur during the nesting season. This is a significant impact. Likewise, mass grading of the footprint for Options 1 and 2 would eliminate upland basking sites for western pond turtle. Potential adverse direct effects to migratory birds and other special status species will be avoided or minimized by implementation of the mitigation measures identified in **Section 5.2.4**.

Waters of the U.S.

Potential Effects to Wetlands

Option 1 would impact 22.28-acres of jurisdictional "waters of the U.S."; Option 2 would impact a total of 26.28-acres of jurisdictional "waters of the U.S." (**Figure 4.5-6; Figure 4.5-7; Table 4.5-16; Table 4.5-17**). This is a significant impact. However, as noted in **Section 2.4.6**, a flood storage area would be created on the southern portion of the Stony Point site that would likely also result in the creation of wetlands. It is possible that these created wetlands will satisfy any mitigation required by the Section 404 permit. However, in any case, the Tribe would be

required to comply with any requirements contained in the CWA Section 404 permit. Mitigation measures are identified in **Section 5.2.4**.

Potential Effects to Drainages

Impacts to plant species within the ditch where the treated wastewater outfall structure is proposed would be similar to Options 1 and 2 under Alternative B. This is a potentially significant, but beneficial impact. No mitigation is required.

TABLE 4.5-16
ANTICIPATED DIRECT EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE C OPTION 1

Wetland Feature	Acreage Affected
Seasonal Ponds and Wetlands	21.79
Drainage Ditches	0.49
Total	22.28

Source: The Huffman-Broadway Group, Inc., 2007.

TABLE 4.5-17
ANTICIPATED DIRECT EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE C OPTION 2

Wetland Feature	Acreage Affected
Seasonal Ponds and Wetlands	25.70
Drainage Ditches	0.49
Total	26.28

Source: The Huffman-Broadway Group, Inc., 2007.

Figure 4.5-6

Figure 4.5-7

4.5.4 ALTERNATIVE D – REDUCED INTENSITY (STONY POINT SITE)

Potential Effects to Wildlife and Habitats

Despite the reduction in the intensity of land development, the grading footprint for Alternative D Options 1 and 2 would be similar to those under Alternative B. Development of Options 1 or 2 for Alternative D would generally impact the same habitats as Options 1 or 2 for Alternative B. **Table 4.5-18** and **Table 4.5-19** provide a summary of the acreage of each habitat type that would be affected under Options 1 or 2. Grading is a potentially significant impact to both resident and foraging wildlife. Mitigation is discussed in **Section 5.2.4**.

TABLE 4.5-18
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE D OPTION 1

Habitat Type	Acreage Affected	Percentage Affected (Based on 360 total acres)
California Annual Grassland	0	0%
Seasonal Pools and Wetlands	19.77	5.49%
Drainage Ditches	0.73	0.20%
Irrigated Pasture	47.31	13.14%
Cultivated Fields	3.09	0.86%
Disturbed/Ruderal	7.66	2.13%
Total	78.56	21.82

Source: The Huffman-Broadway Group, Inc., 2007

TABLE 4.5-19
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE D OPTION 2

Habitat Type	Acreage Affected	Percentage Affected (Based on 360 total acres)
California Annual Grassland	0	0%
Seasonal Pools and Wetlands	21.91	6.07%
Drainage Ditches	0.76	0.21%
Irrigated Pasture	47.31	13.14%
Cultivated Fields	13.46	3.74%
Disturbed/Ruderal	7.66	2.13%
Total	91.10	25.29%

Source: The Huffman-Broadway Group, Inc., 2007.

Federally-listed Species

Impacts from Alternative D to federally-listed species are similar to impacts from Alternative B to federally-listed species. Like Alternative B, Alternative D would impact the CTS and the special status plant species: Burke's goldfields, and the Sonoma sunshine. Potential adverse direct impacts from Alternative D to these three species would be significant. Implementation of

mitigation measures identified in **Section 5.2.4** would offset these impacts and be considered as less than significant.

Special-status Plant Species

The grading footprint of Options 1 and 2 would directly impact approximately 1.38-acres of habitat that is known to have historically supported two federally Endangered Species, Sonoma sunshine and Burke's goldfields. Furthermore, surveys conducted in 2005 and 2007 found Sonoma sunshine at the location. The entire 1.38 acres of habitat is assumed to contain seed banks for the two species. Impacts to 1.38 acres of Sonoma sunshine and Burke's goldfields habitat and seed bank constitute a significant impact. Mitigation is outlined in **Section 5.2.4**.

California Tiger Salamander

The acreage that would be considered impacted from the standpoint of CTS aestivation habitat through development of the project footprint of both options for Alternative D is shown in **Table 4.5-20**. The CTS mitigation requirement for each of the two options is summarized in **Table 4.5-20**. As most of the open space area is within the 100-year floodplain, little to no opportunity exists for setting aside CTS habitat within the on-site open space preserve. Therefore, CTS mitigation would be accomplished off-site. Impacts to the CTS are similar to the impacts outlined for Alternative B (**Section 4.5.2**). Under both options, part of the graded footprint is proposed in areas outside of the 100-year floodplain. Also under both options, parts of the proposed sprayfields are within the floodplain. The parts of the graded footprint and sprayfields that are outside of the floodplain are considered CTS habitat. All areas of CTS habitat impact are between 2200 feet and 1.3 miles from the nearest known breeding location. All impacted areas in these alternatives would therefore require mitigation at a ratio of 1:1. This is a significant impact. Mitigation is discussed in **Section 5.2.4**.

TABLE 4.5-20
MITIGATION REQUIREMENTS FOR ALTERNATIVE D OPTIONS 1 AND 2

Option	Approximate Acreage of Site (acres)	Impacts of Development to CTS Habitat (acres) (graded footprint and sprayfields)	Required CTS Mitigation (2:1 mitigation) (acres)	Approximate Unimpacted On-Site Open Space Preserve (little to no CTS habitat) (acres)	Portion of Open Space to be used as Sprayfields (acres)	Wetland Preservation in on site Open Space Preserve (acres)
1	360	66.92	133.91	281	57.0	41.11
2	360	99.77	166.65	269	101.0	38.94

Source: The Huffman-Broadway Group, Inc., 2007.

Special-status Fish Species

Impacts to steelhead trout and salmonoids under Alternative D options are identical to impacts outlined for Alternative B (**Section 4.5.2**).

Migratory Birds and Other Federal Species of Concern

Alternative D could adversely affect active migratory bird nests located at ground level or in tall weeds if vegetation removal activities associated with project construction occur during the nesting season. This is a potentially significant impact. Likewise, mass grading of Options 1 or 2 footprint, would eliminate upland basking sites for western pond turtle. Potential adverse direct effects to migratory birds and other special status species will be less-than-significant with implementation of the mitigation measures identified in **Section 5.2.4**. Nighttime lighting of the operation of Alternative D has a potentially significant impact on migrating and local bird populations. Increased lighting has been shown to increase collisions of birds and structures, as well as causing a disorientation effect on species. Mitigation measures to reduce potentially significant nighttime lighting impacts are identified in **Section 5.2.4**.

*Waters of the U.S.**Potential Effects to Wetlands*

Option 1 would affect 19.77 acres of seasonal pools and wetland (**Table 4.5-21; Figure 4.5-8**); Option 2 would affect 21.91 acres of the same habitat type (**Table 4.5-22; Figure 4.5-9**). This is a significant impact. However, as noted in **Section 2.5.6**, a flood storage area would be created on the southern portion of the Stony Point site that would likely also result in the creation of wetlands. It is possible that these created wetlands will satisfy any mitigation required by the Section 404 permit. However, in any case, the Tribe would be required to comply with any requirements contained in the CWA Section 404 permit. Mitigation measures are identified in **Section 5.2.4**.

Potential Effects to Drainages

Impacts to plant species within the ditch where the treated wastewater outfall structure is proposed would be the same as Options 1 and 2 under Alternative B. This is a potentially significant, but beneficial impact. No mitigation is required.

TABLE 4.5-21
ANTICIPATED DIRECT EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE D OPTION 1

Wetland Feature	Acreage Affected
Seasonal Ponds and Wetlands	19.77
Drainage Ditches	0.73
Total	20.5

Source: The Huffman-Broadway Group, Inc., 2007.

Insert Figure 4.5-8

Insert Figure 4.5-9

TABLE 4.5-22
ANTICIPATED DIRECT EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE D OPTION 2

Wetland Feature	Acreage Affected
Seasonal Ponds and Wetlands	21.91
Drainage Ditches	0.76
Total	22.67

Source: The Huffman-Broadway Group, Inc., 2007.

4.5.5 ALTERNATIVE E – BUSINESS PARK

Potential Effects to Wildlife and Habitats

Despite the reduction in the intensity of land development, the grading footprint of Options 1 and 2 for Alternative E would be similar to that of Alternative B. Development of Options 1 and 2 of Alternative E would therefore generally impact the same habitats as those of Alternative B (**Table 4.5-23; Table 4.5-24**). Grading is a potentially significant impact to both resident and foraging wildlife. Mitigation is discussed in **Section 5.2.4**.

TABLE 4.5-23
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE E OPTION 1

Habitat Type	Acreage Affected	Percentage Affected (Based on 360 total acres)
California Annual Grassland	0	0%
Seasonal Pools and Wetlands	19.69	5.47%
Drainage Ditches	0.72	0.20%
Irrigated Pasture	47.50	13.19%
Cultivated Fields	1.56	0.43%
Disturbed/Ruderal	7.64	2.12%
Total	77.11	21.41

Source: The Huffman-Broadway Group, Inc., 2007.

TABLE 4.5-24
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE E OPTION 2

Habitat Type	Acreage Affected	Percentage Affected (Based on 360 total acres)
California Annual Grassland	0	0%
Seasonal Pools and Wetlands	20.96	5.82%
Drainage Ditches	0.73	0.20%
Irrigated Pasture	47.50	13.19%
Cultivated Fields	6.29	1.74%
Disturbed/Ruderal	7.64	2.12%
Total	83.12	23.07%

Source: The Huffman-Broadway Group, Inc., 2007.

Potential Effects to Wetlands

Options 1 and 2 of Alternative E would impact the same seasonal pools and wetlands as those of Alternative D. Impacts to plant species within the ditch where the treated wastewater outfall structure is proposed would be the same as those of Alternative D. This is a potentially significant but beneficial impact. No mitigation is required.

Federally-listed Species

Impacts on federally-listed species are similar to those of Alternative D and would include impacts to the CTS, and the special status species: Burke's goldfields, and the Sonoma sunshine. This is a significant impact. Mitigation measures are identified in **Section 5.2.4**.

Special-status Plant Species

The grading footprint of Options 1 and 2 would directly impact approximately 1.38-acres of habitat that is known to have historically supported two federally Endangered Species, Sonoma sunshine and Burke's goldfields. Furthermore, surveys conducted in 2005 and 2007 found Sonoma sunshine at the location. The entire 1.38-acres of habitat is assumed to contain seed banks for the two species. Impacts to 1.38-acres of Sonoma sunshine and Burke's goldfields habitat and seed bank constitute a significant impact. Mitigation is outlined in **Section 5.2.4**.

California Tiger Salamander

Table 4.5-25 shows the acreage that would be considered impacted from the standpoint of CTS aestivation habitat through development of the project footprint for both variants of Alternative E. The CTS mitigation requirement for each option is summarized in **Table 4.5-25**. As most of the open space area is within the 100-year floodplain, little to no opportunity exists for setting aside CTS habitat within the on-site open space preserve. Therefore, CTS mitigation would be accomplished off-site. Impacts to the CTS are similar to the impacts outlined in **Section 4.5.2**. Under both options, part of the graded footprint is proposed in areas outside of the 100-year floodplain. Also under both options, parts of the proposed sprayfields are within the floodplain. The parts of the graded footprint and sprayfields that are outside of the floodplain are considered CTS habitat. All areas of CTS habitat impact are between 2200 feet and 1.3 miles from the nearest known breeding location. All impacted areas in these alternatives would therefore require mitigation at a ratio of 1:1. This is a significant impact. Mitigation is discussed in **Section 5.2.4**.

TABLE 4.5-25
MITIGATION REQUIREMENTS FOR ALTERNATIVE E OPTIONS 1 AND 2

Option	Approximate Acreage of Site (acres)	Impacts of Development to CTS Habitat (acres) (graded footprint and sprayfields)	Required CTS Mitigation (acres)	Approximate Unimpacted On-Site Open Space Preserve (little to no CTS habitat) (acres)	Portion of Open Space to be used as Sprayfields (acres)	Wetland Preservation in on site Open Space Preserve (acres)
1	360	48.36	106.76	283	19.0	41.36
2	360	55.03	113.42	277	37.0	40.08

Source: The Huffman-Broadway Group, Inc., 2007.

Special-status Fish Species

Impacts to steelhead trout and salmonoids under Alternative E options are identical to impacts outlined for Alternative B (**Section 4.5.2**).

Migratory Birds and Other Federal Species of Concern

Options 1 and 2 could adversely affect active migratory bird nests located at ground level or in tall weeds if vegetation removal activities associated with project construction occur during the nesting season. This is a potentially significant impact. Likewise, mass grading of Options 1 or 2 footprint would eliminate upland basking sites for western pond turtle. Potential significant adverse direct effects to migratory birds and other special status species will be less-than-significant with implementation of the mitigation measures identified in **Section 5.2.4**.

Nighttime lighting of the operation of Alternative E has a potentially significant impact on migrating and local bird populations. Increased lighting has been shown to increase collisions of birds and structures, as well as causing a disorientation effect on species. Mitigation measures to reduce potentially significant nighttime lighting impacts are identified in **Section 5.2.4**.

Waters of the U.S.

Potential Effects to Wetlands

Option 1 would affect 19.69 acres of seasonal pools and wetlands (**Table 4.5-26; Figure 4.5-10**); Option 2 would affect 20.96 acres of the same habitat type (**Table 4.5-27; Figure 4.5-11**). This is a significant impact. However, as noted in **Section 2.6.4**, a flood storage area would be created on the southern portion of the Stony Point site that would likely also result in the creation of wetlands. It is possible that these created wetlands will satisfy any mitigation required by the Section 404 permit. However, in any case, the Tribe would be required to comply with any requirements contained in the CWA Section 404 permit. Mitigation measures are identified in **Section 5.2.4**.

Figure 4.5-10

Figure 4.5-11

TABLE 4.5-26
ANTICIPATED DIRECT EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE E OPTION 1

Wetland Feature	Acreage Affected
Seasonal Ponds and Wetlands	19.69
Drainage Ditches	0.72
Total	20.41

Source: The Huffman-Broadway Group, Inc., 2007.

TABLE 4.5-27
ANTICIPATED DIRECT EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE E OPTION 2

Wetland Feature	Acreage Affected
Seasonal Ponds and Wetlands	20.96
Drainage Ditches	0.73
Total	21.69

Source: The Huffman-Broadway Group, Inc., 2007.

Potential Effects to Drainages

Impacts to plant species within the ditch where the treated wastewater outfall structure is proposed would be the same as those of Alternative B. This is a potentially significant, but beneficial impact. No mitigation is required.

4.5.6 ALTERNATIVE F – LAKEVILLE SITE

Potential Effects to Wildlife and Habitats

Development of Alternative F would affect habitats that are utilized by wildlife species indigenous to the Lakeville site. **Table 4.5-28** and **Table 4.5-29** provide a summary of the acreage of each habitat type that would be affected under Options 1 and 2 (**Appendix K**). As shown in this table, Option 1 would affect 50.2 percent of the 329 acres of habitat and Option 2 would affect 64.17 percent of the 329-acres within the Lakeville site. The habitat disturbance, approximately 165 and 212-acres respectively, would more or less be divided into grassland and marsh. Grading is a potentially significant impact to both resident and foraging wildlife. Mitigation is discussed in **Section 5.2.4**.

TABLE 4.5-28
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE F OPTION 1

Habitat Type	Acreage Affected	Percentage Affected (Based on 329 total acres)
California Annual Grassland	66.48	20.20%
Fresh Emergent Marsh	98.65	29.98%
Total	165	50.2%

Source: The Huffman-Broadway Group, Inc., 2007.

TABLE 4.5-29
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE F OPTION 2

Habitat Type	Acreage Affected	Percentage Affected (Based on 329 total acres)
California Annual Grassland	100.48	30.54%
Fresh Emergent Marsh	110.65	33.63%
Total	212.13	64.17%

Source: The Huffman-Broadway Group, Inc., 2007.

Federally-listed Species

The following discussion evaluates the potential direct effects Alternative F may have on each federally-listed species with a potential to be affected by activities within the alternative Lakeville site. Alternative F would remove potential habitat for Callippe Silverspot and Myrtle's Silverspot Butterfly and California red-legged frog, including several potential breeding ponds (The Huffman-Broadway Group, Inc., 2003). This is a potentially significant impact. Mitigation is discussed in **Section 5.2.4**.

Special-status Plant Species

The grading footprint of Alternative F would directly impact approximately 20.65-acres of seasonal wetlands that are known to have historically supported two federally Endangered Species, and is currently known to support dwarf downingia and saline clover. This is a significant impact that will require mitigation as outlined in **Section 5.2.4**. The footprint would also directly impact approximately 20.65-acres of seasonal wetlands that may support Sonoma sunshine. If the Lakeville site were pursued for development, rare plant surveys in March or April would be implemented.

California Red-legged Frog

The north section of the Lakeville site has suitable habitat characteristics for the California red-legged frog. Wetland areas with inundation sufficient to support breeding populations are present

in the northern and western portions of the site (Huffman-Broadway Group, Inc. 2007; **Appendix K**). This is a potentially significant impact. Mitigation measures are identified in **Section 5.2.4**.

Callippe Silverspot and Myrtye's Silverspot

Callippe Silverspot and Myrtye's Silverspot are butterflies documented to occur in the area of the proposed development. These species feed exclusively on *Viola* spp. Development of the Lakeville site could destroy breeding and feeding habitats for these species. This is a potentially significant impact. Mitigation measures are identified in **Section 5.2.4**.

Special-status Fish Species

Several species of federally-listed fish occur in the region, principally due to the proximity of the site to San Pablo Bay and the Petaluma River. These include green sturgeon, tidewater goby, Delta smelt, river lamprey, Pacific lamprey, Coho salmon, steelhead, Chinook salmon, Sacramento splittail, and long-fin smelt. This is a potentially significant impact. Mitigation measures are identified in **Section 5.2.4**.

Migratory Birds and Other Federal Species of Concern

There are numerous bird species of federal concern known from the region. These include tri-colored blackbird, Bell's sage sparrow, Vaux's swift, black swift, white-tailed kite, ferruginous hawk, marbled godwit, San Pablo song sparrow, Rufous hummingbird, Allen's hummingbird, Lewis' woodpecker, bank swallow, black skimmer, burrowing owl, horned lark, and loggerhead shrike. The development of Alternative F would affect vegetation communities that could potentially support active migratory bird nests. Migratory birds and their nests are protected from any "take" according to the federal Migratory Bird Treaty Act. Alternative F could affect active migratory bird nests if vegetation removal activities associated with project construction occur during the nesting season. This is a potentially significant impact. Potential adverse direct effects to migratory birds will be less-than-significant with implementation of the mitigation measures identified in **Section 5.2.4**.

Nighttime lighting of the operation of Alternative F has a potentially significant impact on migrating and local bird populations. Increased lighting has been shown to increase collisions of birds and structures, as well as causing a disorientation effect on species. Mitigation measures to reduce potentially significant nighttime lighting impacts are identified in **Section 5.2.4**.

Waters of the U.S.

Potential Effects to Wetlands

Development of Options 1 and 2 under Alternative F would directly affect 98.65 and 110.65-acres, respectively, of fresh emergent marshes (**Table 4.5-30** and **Table 4.5-31**), including several

breeding ponds for the California red-legged frog. This is a potentially significant impact. Mitigation is discussed in **Section 5.2.4**.

TABLE 4.5-30
ANTICIPATED DIRECT EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE F OPTION 1

Wetland Feature	Acreage Affected
Fresh Emergent Marsh	98.65
Total	98.65

Source: The Huffman-Broadway Group, Inc., 2007.

TABLE 4.5-31
ANTICIPATED DIRECT EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE F OPTION 2

Wetland Feature	Acreage Affected
Fresh Emergent Marsh	110.65
Total	110.65

Source: The Huffman-Broadway Group, Inc., 2007.

Potential Effects to Drainages

Approximately 20.65-acres of wetland and “waters of the U.S.” would be impacted by the footprint of Alternative F. Wetlands surround the project footprint to the south and west. Approximately 150-acres of wetlands are present on the 329-acre Lakeville site. This is a potentially significant impact. Mitigation is discussed in **Section 5.2.4**.

4.5.7 ALTERNATIVE G – NO ACTION

Under the No Action Alternative, neither the Wilfred/Stony Point sites nor the Lakeville site would be developed as described in the alternatives and the accompanying options presented above. The Wilfred site Stony Point site and the Lakeville site would remain in their current condition. Future development of either site would be guided by existing land use plans.

However, a portion of the Wilfred site, overlaps with a specific plan recently prepared by the City of Rohnert Park (**Figure 2-32**). In the event that Alternative A is not implemented, the area of overlap would be subject to the program of development set forth in the Northwest Specific Plan Southern Area (Southern Specific Plan). An overview of the various elements of the Southern Specific Plan is presented in **Section 2.8**. The developed area of Alternative G, would be similar to Alternative A (but slightly reduced given that no treated wastewater storage ponds, sprayfields, or surface water treated wastewater discharge would occur on-site), resulting in similar impacts to biological resources (see **Section 4.5.1**). As discussed above, potentially significant impacts to

biological resources would result from the development of the northeast corner of the Wilfred site. Mitigation measures are included in **Section 5.2.4** that would reduce impacts to biological resources to a less-than-significant level.

4.5.8 ALTERNATIVE H –REDUCED INTENSITY (WILFRED SITE)

Potential Effects to Wildlife and Habitats

Development of wastewater treatment options for Alternative H would affect habitats that are utilized by wildlife species. **Table 4.5-32 - Table 4.5-34** provide a summary of the acreage of each habitat type that would be affected under Alternative H. Wastewater treatment options for each alternative are summarized in **Table 2-2**. Development of Option 1 would impact 57.19 acres; Development of Option 2 would impact 65.18 acres; Option 3 would impact 75.95 acres. Most of the habitat disturbance resulting from the development of Alternative H would occur in cultivated fields, 56.05, 63.21 and 73.98 acres respectively. Ground disturbance (such as grading) is a potentially significant impact to both resident and foraging wildlife. Mitigation is discussed in **Section 5.2.4**.

TABLE 4.5-32
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE H OPTION 1

Habitat Type	Acreage Affected	Percentage Affected (Based on 253 total acres)
California Annual Grassland	0	0%
Seasonal Pools and Wetlands	0.70	0.28%
Drainage Ditches	0.44	0.17%
Irrigated Pasture	0	0%
Cultivated Fields	56.05	22.15%
Disturbed/Ruderal	0	0%
Total	57.19	22.60%

Source: The Huffman-Broadway Group, Inc., 2007.

TABLE 4.5-33
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE H OPTION 2

Habitat Type	Acreage Affected	Percentage Affected (Based on 253 total acres)
California Annual Grassland	0	0%
Seasonal Pools and Wetlands	1.49	0.59%
Drainage Ditches	0.48	0.19%
Irrigated Pasture	0	0%
Cultivated Fields	63.21	24.98%
Disturbed/Ruderal	0	0%
Total	65.18	25.76

Source: The Huffman-Broadway Group, Inc., 2007.

TABLE 4.5-34
ANTICIPATED EFFECTS TO HABITAT TYPES – ALTERNATIVE H OPTION 3

Habitat Type	Acreage Affected	Percentage Affected (Based on 253 total acres)
California Annual Grassland	0	0%
Seasonal Pools and Wetlands	1.49	0.59%
Drainage Ditches	0.48	0.19%
Irrigated Pasture	0	0%
Cultivated Fields	73.98	29.24%
Disturbed/Ruderal	0	0%
Total	75.95	30.02%

Source: The Huffman-Broadway Group, Inc., 2007.

Federally-listed Species

The following discussion evaluates the potential direct effects Options 1, 2 and 3 may have on each federally-listed species by development activities on the Wilfred site. Habitat for two federally Endangered plant species, the Sonoma sunshine and Burke's goldfields, has been documented in historical records in the vicinity of all Options.

Special-status Plant Species

The implementation of either Option 1, 2 or 3 would have no effect on the recently discovered population of Sonoma sunshine, nor would either of these options have any affect on the area of historical occurrence of Sonoma sunshine and Burke's goldfields mapped in the CNDDDB. Options 1 would impact 0.70-acres of seasonal wetlands and Options 2 and 3 would impact 1.49-acres of seasonal wetlands that provide potentially suitable habitat for the listed plant species of the Santa Rosa Plain. Species-specific surveys were conducted in this area of impact (see **Section 3.5.4**). None of the listed plants were observed. Therefore, impacts to special status plant species would be less than significant. Nonetheless, mitigation is required by the Santa Rosa Plain Conservation Strategy. Mitigation for the impact to occupied and/or suitable habitat for the endangered plants is recommended in **Section 5.2.4**.

California Tiger Salamander

It is likely that California tiger salamander occurs on the Wilfred site. **Table 4.5-35** shows the acreage that would be considered impacted from the standpoint of CTS aestivation habitat through development of the project footprint for both options for Alternative H. The Programmatic Biological Opinion requires mitigation at a ratio of 3:1 for projects that are within 500 feet of a breeding site; 2:1 for projects that are greater than 500 feet and within 2200 feet of a known breeding site, and projects beyond 2200 feet from a known breeding site but within 500

feet of an adult occurrence; and 1:1 for projects that are greater than 2200 feet and within 1.3 miles of a known breeding site. As most of the open space area is within the 100-year floodplain, little to no opportunity exists for setting aside CTS habitat within the on-site open space preserve. Therefore, CTS mitigation would be accomplished off-site. The mitigation requirement for each site option is summarized in **Table 4.5-35**.

Development of Option 1 of Alternative H would result in impacts to 57.77-acres of CTS aestivation habitat (**Table 4.5-35**). Development of Option 2 of Alternative H would result in impacts to 65.28-acres of CTS aestivation habitat. Development of Option 3 of Alternative H would result in impacts to 76.05 acres. Under all options, nearly the entire graded footprint is proposed in areas outside of the 100-year floodplain. Also under both options, all areas of sprayfields are proposed within the floodplain. Nearly the entire graded footprint is in areas considered CTS habitat, and all of the areas proposed for sprayfields are in areas not considered CTS habitat. All areas of CTS habitat impact are between 2200 feet and 1.3 miles from the nearest known breeding location. All impacted areas in these alternatives would therefore require mitigation at a ratio of 1:1.

Development impacts on aestivation habitat for the CTS within the 66-acre portion of this site contained within the Northwest Specific Plan, have been previously evaluated in a Section 7 Biological Opinion (BO) for a different project. The USFWS issued a Biological Opinion on August 5, 2005 related to a Section 7 consultation conducted as part of the USACE permit application process for a mixed use project (commercial, residential and light industrial) proposed by Redwood Equities, L.P. The BO for the mixed use project requires mitigation for CTS aestivation habitat at a ratio of 0.5:1. Discussions with USFWS have found that USFWS would consider an amendment to the existing BO as the means to obtain the requisite “take” authorization from the agency related to the CTS. The BO is valid for a commercial project at the site and has not expired as it is in response to a request made by the U.S. Army Corps of Engineers for Section 7 consultation for an existing on-going permit application. The applicant proposes to move mitigation for CTS aestivation habitat from the less stringent 0.5:1 ratio required in the previous BO to a more stringent 1:1 ratio.

TABLE 4.5-35
 IMPACTS AND MITIGATION REQUIREMENTS FOR ALTERNATIVE H OPTIONS 1, 2 AND 3

Option	Approximate Acreage of Site (acres)	Impacts of Development to CTS Habitat (acres) (graded footprint and sprayfields)	Required CTS Mitigation (acres)	Approximate Ungraded On-Site Open Space Preserve (acres) (little to no CTS habitat)	Portion of Open Space to be used as Sprayfields (acres)	Wetland Preservation in On-Site Open Space Preserve (acres)
1	253	57.77	57.77	195	0	17.30
2	253	65.28	65.28	188	37.0	16.45
3	253	76.05	76.05	177	83.0	16.16

Source: The Huffman-Broadway Group, Inc., 2007.

Table 4.5-35 evaluates the mitigation requirements for Alternative H Options 1, 2 and 3. Mitigation requirements would equal 57.77 acres for Alternative H Option 1, 65.28 acres for Alternative H Option 2, and 76.05 acres for Alternative H Option 3. None of the mitigation would be accomplished on-site as most of the area available for open space dedication is within the 100-year floodplain and not considered suitable CTS habitat. All mitigation would be accomplished off-site and would consist of the purchasing of CTS credits from an approved mitigation bank or the purchase of farmland within known CTS habitat (where CTS is known to occur) and placement of the land under conservation easement. Under the latter method, the purchased land would be placed in a conservation easement and subject to funding agreements and a long-term management program aimed at CTS conservation. Mitigation is further discussed in **Section 5.2.4**.

Special-status Fish Species

There are reports of steelhead fish occurring in Coleman Creek, which is upstream of the confluence of the Laguna de Santa Rosa and the Bellevue-Wilfred Channel (Entrix, 2004). Steelhead fish ostensibly migrate from the Russian River into the Laguna de Santa Rosa and Coleman Creek. The effects of the project's treated wastewater discharges on this species include higher creek temperatures, eutrophication, and possible feminization of fish from endocrines in wastewater. These effects are described and referenced in the Effluent Study (**Appendix V**). It is unlikely, however, that the EPA would allow discharge of effluent into the Laguna de Santa Rosa except during the winter months when Russian River flow is high (more than 1,000 cfs at the Hacienda Bridge), thus diluting constituent concentrations. Since effluent would be diluted with high flows in the Russian River, the impact of the project's treated wastewater discharges on this species would be less than significant. Additionally, siltation of the Laguna de Santa Rosa from site grading could occur. However, adoption of BMPs outlined in the project description (**Section 2.2.5**) including implementation of a stormwater pollution prevention plan (SWPPP) would eliminate siltation of the Laguna de Santa Rosa.

In a ten-year study of the Russian River drainage, the City of Santa Rosa reports that agricultural diversions and drought had the greatest impact on migrating and spawning salmonid fish (Santa Rosa, 2003; Merritt-Smith, 2003a, b). The City's study and the subsequent EIRs (Santa Rosa, 2003, 2004b) reveal that discharges of tertiary treated wastewater into the Laguna de Santa Rosa in the winter months do not significantly impact biological resources, including threatened and endangered salmonid fish, amphibians, or invertebrates. The City of Santa Rosa's studies, including the subsequent EIR's are discussed in the context of the proposed project in the Effluent Study (**Appendix V**).

The Effluent Study (**Appendix V**) concludes that the general effects of tertiary treated wastewater discharges on salmonids of the Russian River system are negligible. Therefore, the effects of Alternative H on steelhead fish are considered less-than-significant due to the anticipated winter discharge requirement of the USEPA and the relatively insignificant constituent concentrations that will be contributed to the Russian River from the proposed wastewater treatment plant (**Figure 8 of Appendix V**). Nevertheless, Section 7 Consultation with NOAA Fisheries will be initiated if treated wastewater is discharged into the Laguna de Santa Rosa.

Migratory Birds and Other Federal Species of Concern

Several raptor species have the potential to utilize the site, primarily as foraging habitat. These species include the burrowing owl (also a species of federal concern), northern harrier, white-tailed kite, sharp-shinned hawk, Cooper's hawk and golden eagle. Winter use of the site by these species is possible, however, in all cases, with the exception of Burrowing Owl, appropriate nesting habitat does not appear to be present. A burrowing owl was observed on-site in January 2004. Subsequent surveys uncovered no evidence that the species used the site for nesting. Three raptors that may occur are designated as state species of special concern based on presence of wintering habitat (Ferruginous Hawk, Golden Eagle, and Merlin). Ferruginous Hawk is also a federal species of special concern. These species are wide-ranging species often wintering over a broad area, and incidental use of the site by these species, primarily during winter, is certainly possible. The site, provides no unique features that would highlight the importance of the site as a wintering location for any of these species.

Nighttime lighting of the operation of Alternative H has a potentially significant impact on migrating and local bird populations. Increased lighting has been shown to increase collisions of birds and structures, as well as causing a disorientation effect on species. Mitigation measures to reduce potentially significant nighttime lighting impacts are identified in **Section 5.2.4**.

Potential significant adverse direct effects to migratory birds and other special status species will be less-than-significant with implementation of the mitigation measures identified in **Section 5.2.4**.

Waters of the U.S.

Potential Effects to Wetlands

Approximately 0.70 acres of seasonal pools and wetlands would be graded and filled by wastewater treatment option 1 and approximately 1.49 acres of seasonal pools and wetlands would be graded and filled by wastewater treatment options 2 and 3. Seasonal pools and wetlands constitute habitat for both aquatic and terrestrial wildlife including insects, amphibians, reptiles, birds and small mammals. Grading of the topsoil and herbaceous layer of native and introduced vegetation would remove primary decomposers and producers thus disrupting the food chain leading to the aquatic and terrestrial organisms. This is a significant impact.

Potential Effects to Drainages

The proposed development of Option 1 would impact 0.44-acres of drainages and the proposed development of either Option 2 or 3 would each impact 0.48-acres of drainages. The floor and sides of the ditch where the treated wastewater outfall structure is proposed are vegetated with weedy species. Flowing water and aquatic life were absent when viewed on June 9, 2004. The addition of a permanent water source along the ditch would stimulate the growth of hydrophytes, and ultimately create conditions for the growth of hydrophytic vegetation. This is a potentially significant, but beneficial impact. No mitigation is required.

A formal delineation identified 18.44-acres of “waters of the U.S.” on the Wilfred site. These features are subject to USACE jurisdiction under the Clean Water Act and any discharge of dredged or fill material within the “waters of the U.S.” would require a Clean Water Act, Section 404 permit. Anticipated direct effects to jurisdictional “waters of the U.S.” total 1.14-acres with the development of Option 1 and 1.97-acres with the development of either Option 2 or 3. **Table 4.5-36 - Table 4.5-38** summarize the impacts of options for Alternative H. **Figure 4.5-12 - Figure 4.5-14** show the wetland impacts of each option. A significant impact would result for each option. As noted in **Section 2.10.6**, a flood storage area would be created on the southern portion of the Wilfred site that would likely also result in the creation of wetlands. It is possible that these created wetlands will satisfy any mitigation required by the Section 404 permit. However, in any case, the Tribe would be required to comply with any requirements contained in the CWA Section 404 permit. Mitigation measures are identified in **Section 5.2.4**.

TABLE 4.5-36
ANTICIPATED DIRECT EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE H OPTION 1

Wetland Feature	Acreage Affected
Seasonal Pools and Wetlands	0.70
Drainage Ditches	0.44
Total	1.14

Source: The Huffman-Broadway Group, Inc., 2007.

TABLE 4.5-37
ANTICIPATED DIRECT EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE H OPTION 2

Wetland Feature	Acreage Affected
Seasonal Pools and Wetlands	1.49
Drainage Ditches	0.48
Total	1.97

Source: The Huffman-Broadway Group, Inc., 2007.

TABLE 4.5-38
ANTICIPATED DIRECT EFFECTS TO WATERS OF THE U.S. – ALTERNATIVE H OPTION 3

Wetland Feature	Acreage Affected
Seasonal Pools and Wetlands	1.49
Drainage Ditches	0.48
Total	1.97

Source: The Huffman-Broadway Group, Inc., 2007.

Insert Figure 4.5-12

Insert Figure 4.5-13

Insert Figure 4.5-14