

SECTION 5.0

MITIGATION MEASURES

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5.1 LAND RESOURCES

Implementation of the protective measures and Best Management Practices (BMPs) described in **Section 2.0**, along with the mitigation measures below shall minimize potential impacts related to soils. These measures are recommended for Alternatives A, B, and C.

- All site preparation and earthwork construction in the field shall be performed by licensed contractors.
- Suitability of earth and construction materials shall be determined by a licensed professional employing geotechnical/soils laboratory testing standards according to standard engineering practice.
- All grading plans, subsurface investigations, and slope stability and seismic design calculations as well as all foundation, paving, and building design parameters shall be produced under the supervision of appropriate licensed professionals.
- Construction on expansive soil shall be mitigated by using specialized grading techniques or designing structural foundations to withstand expansion pressures.
- The effects of soil movement shall be mitigated by strengthening the soils during grading and/or designing and constructing satisfactory foundation support.
- Prior to finalization of the grading and development plans for the property, design-level geotechnical specifications addressing the specific grading and development plans shall be developed. The specifications should include, but not be limited to, the following:
 - Site, building and facility-specific grading recommendations regarding site preparation, clearing and grubbing.
 - Select grading procedures, remedial grading procedures, material suitability and compaction criteria.
 - Cut and fill slope stability analyses, recommended slope configurations and inclinations.
 - Evaluation of soil expansion and corrosion potential.
 - Building-specific foundation design parameters.
 - Site-specific seismic design parameters.
 - Lateral earth pressure parameters for retaining wall design, if any.
 - Pavement design specifications.

5.2 WATER RESOURCES

Implementation of the protective measures and BMPs described in **Section 2.0** along with the recommended mitigation measures below would minimize potential impacts related to the construction of Alternatives A, B, and C.

- The Tribe shall obtain a National Pollutant Discharge Elimination System permit (NPDES General Permit) from the USEPA for construction site runoff during the construction phase in compliance with the Clean Water Act (CWA). A Storm Water Pollution and Prevention Plan (SWPPP) shall be prepared, implemented, and maintained throughout the construction phase of the development, consistent with General Permit requirements. The SWPPP would detail the BMPs to be implemented during construction and post-construction operation of the Proposed Project. The BMPs may include, but are not limited to, the following:
 - Straw wattle placement on cut and fill slopes.
 - Straw wattle check dam installation within drainage swales.
 - Covering disturbed areas with plastic, hydro-seed applications, or straw.
 - Construction entrance installation to reduce off-site sediment transport.
 - Revegetation following construction activities.
- If Alternative B or C is chosen, the Tribe shall construct a tertiary wastewater treatment plant as described in **Appendix B**. Salt-based chemicals shall not be used whenever feasible in the wastewater treatment process. Water softeners that dispose of salt into the wastewater system shall be prohibited.
- Should Alternative B be chosen, the Tribe shall obtain a NPDES permit for surface discharge of treated effluent.

5.3 AIR QUALITY

Implementation of the protective measures and BMPs described in **Section 2.0** along with the recommended mitigation measures listed below would minimize potential impacts associated with air quality for Alternatives A, B, and C.

- Construction vehicles, delivery, and commercial vehicles shall not idle for more than five minutes.
- The Tribe shall designate an onsite Air Quality Construction BMP Manager (AQCBM) who shall be responsible for directing compliance with BMPs for the project construction heavy-duty equipment; and
- The AQCBM shall be responsible for directing compliance with the following BMPs for fugitive dust control practices during project construction:

- For any earth moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.
- For all disturbed surface areas apply dust suppression in a sufficient quantity and frequency to maintain a stabilized surface; any areas, which cannot be stabilized, as evidenced by wind driven dust, must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
- Establish a vegetative ground cover as soon as feasible after active operations have ceased.
- For all unpaved roads either water all roads used for any vehicular traffic as often as necessary to minimize dust; or apply chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
- Provide track-out control to minimize tracking of soil onto neighboring roadways
- For all off site haul vehicles, cover loads.

5.4 **BIOLOGICAL RESOURCES**

Implementation of the protective measures and BMPs described in **Section 2.0**, along with the mitigation measures below, would ensure that impacts to biological resources are less than significant.

5.4.1 **WATERS OF THE U.S.**

The following mitigation measures are recommended for Alternatives A, B, and C to avoid and/or reduce impacts to waters of the U.S. (including wetlands) within the project site:

- A 50-foot setback, where possible, shall be established around each of the wetland features within the project development and no development shall occur within the setback areas.
- Prior to the onset of construction activities, wetland avoidance setbacks shall be established around jurisdictional wetland features using high-visibility fencing. A qualified biologist shall be present during construction activities that ensue within the vicinity of the wetland avoidance buffer zones. The qualified biologist shall monitor during construction to make sure that the fencing remains intact and that construction activities do not penetrate the wetland avoidance buffer zones. When project development is completed, the high-visibility fencing may be removed.
- Temporary fencing shall be installed around riparian habitats. Fencing shall be in place prior to the initiation of any construction activities and no encroachment into the fenced areas shall be permitted. Fencing shall remain in place until all construction activities have ceased.

- Any proposed construction activities that would occur within the vicinity of jurisdictional waters of the U.S. shall be conducted during the dry season (i.e., April 15 through October 15) to further reduce sedimentation within the watershed.
- If complete avoidance of waters of the U.S. is not possible and impacts to wetland features cannot be avoided, authorization from the USACE is required. A Section 404 CWA permit shall be obtained from the USACE and mitigation ratios defined within the permit conditions shall be implemented. Typical Nationwide Permits (NWP) mitigation occurs at a ratio of 1:1 acres created versus impacted and 2:1 acres preserved versus impacted. Individual permit conditions may vary. A CWA Section 401 Water Quality Certification permit from the U.S. EPA would also be required.

5.4.2 NATIVE TREES

- The highest density areas of mixed oak woodland habitat shall undergo a vigorous thinning regime, such that up to 50 percent of the trees within these areas are removed in order to reduce the intense fire hazard posed by the existing conditions on site. Systematic thinning within the mixed oak woodland habitat on site would facilitate optimal growth and development of the remaining (i.e., preserved) trees on-site, and would reduce susceptibility to disease, insects infestation, and parasites. Upon completion of thinning and project construction, remaining trees within these areas should be trimmed by a certified arborist or forester to remove any dead or injured branches. This recommendation is proposed for all of the alternatives, including the No Action Alternative, and should be applied to trees remaining in the overcrowded areas following project construction.

5.4.3 SPECIAL-STATUS PLANTS

The following mitigation measures are recommended for Alternatives A, B, and C to avoid and/or reduce impacts to any potentially occurring special-status plant species or their habitats within the project site:

- The remaining floristic surveys for Sonoma sunshine, Sebastopol meadowfoam, Burke's goldfields, and many-flowered navarretia shall be conducted within the required areas of the project site in accordance with the Santa Rosa Plain Conservation Strategy protocol prior to groundbreaking on those parcels.
- If the protocol-level floristic survey results are positive, then formal consultation with USFWS must be initiated. Upon consultation, an appropriate course of action shall be established.
- Prior to the onset of construction activities, an avoidance plan must be formulated, submitted, and approved by the USFWS. It is likely entail the following basic principles:

- Prior to the onset of construction activities the areas where the plants occur shall be delineated with avoidance buffers via high visibility fencing. The avoidance buffers may be 50 feet in width, unless otherwise specified by USFWS.
 - A qualified botanist shall be present during construction activities that ensue within the vicinity of the special-status plant avoidance buffer zones and monitored to ensure that the fencing remains intact and that construction activities do not penetrate the special-status plant avoidance buffer zones.
 - When project development is completed, the high-visibility fencing may be removed. However, future development shall not occur within the setback buffer areas.
- If complete avoidance of the Santa Rosa Plain special-status plants is not feasible, the Tribe shall mitigate for impacts to the plants according to the mitigation ratios in **Table 5-1**, which are outlined in the *Programmatic Consultation for USACE 404 Permitted Projects that May Affect Four Endangered Plant Species on the Santa Rosa Plain, California* (File Number 223420N) (USFWS, 2007).

TABLE 5-1
SUMMARY OF MITIGATION RATIOS FOR THE FEDERALLY LISTED PLANTS
OF THE SANTA ROSA PLAIN*

Impact to:	Occupied Habitat Compensation	Suitable Habitat Compensation
Burke's goldfields OR Sonoma sunshine	3:1 occupied or established habitat (any combination) with success criteria met prior to groundbreaking at project site	1:1 occupied or established habitat (any combination) with success criteria met prior to groundbreaking at project site AND 0.5:1 established habitat with success criteria met prior to groundbreaking at project site.
Sebastopol meadowfoam	2:1 occupied or established habitat (any combination) with success criteria met prior to groundbreaking at project site	1:1 occupied or established habitat (any combination) with success criteria met prior to groundbreaking at project site AND 0.5:1 established habitat with success criteria met prior to groundbreaking at project site.
Source: USFWS, 2007		
Note: *According to the USFWS Biological Opinion issued for the 2007 Consultation, "This Programmatic will not cover the many-flowered navarretia because of its limited distribution [on the Santa Rosa Plain]." (USFWS, 2007:4)		

5.4.4 NESTING MIGRATORY BIRDS

The following mitigation measures are recommended for Alternatives A, B, and C to avoid and/or reduce impacts to any potentially occurring migratory bird species within the project site:

- If any construction activities are scheduled to occur during the nesting season, pre-construction bird surveys shall be conducted. Pre-construction surveys for any nesting bird species shall be conducted by a qualified wildlife biologist, throughout all areas of suitable habitat that are within 500 feet of any proposed construction activity. The surveys shall occur no more than 14 days prior to the scheduled onset of construction activities. If construction is delayed or halted for more than 14 days, another pre-construction survey for nesting bird species shall be conducted. If no nesting birds are detected during the pre-construction surveys no additional surveys or mitigation measures are required.
- If migratory nesting bird species are observed within 500 feet of the construction area during the surveys, appropriate avoidance setbacks shall be established by the qualified biologist. The size and scale of nesting bird avoidance setbacks is dependent upon the species of nesting bird observed and the habitat that the nest occurs. Avoidance setbacks shall be established around all active nest locations via stakes and high visibility fencing. The nesting bird setbacks shall be completely avoided during the duration of construction activities and the fencing must remain intact. The qualified biologist shall also determine an appropriate monitoring plan and shall decide if construction monitoring is necessary during the duration of construction activities. Again, monitoring requirements are dependent upon the species of nesting birds observed, the habitat in which the nests are contained, and the number of nests observed. The setback fencing may be removed when the qualified biologist confirms that the nest(s) are no longer occupied and all young have fledged.
- If impacts (i.e., take) to migratory nesting bird species are unavoidable, consultation with USFWS shall be initiated. Through consultation, an appropriate and acceptable course of action shall be established.

5.5 CULTURAL RESOURCES

The following mitigation measures are recommended for Alternatives A, B, and C to reduce the potential for significant construction-related impacts to previously unknown cultural resources, including archaeological sites, human remains, and/or paleontological resources:

- Should any buried cultural materials (archaeological or paleontological) be uncovered during ground-disturbing project activities, such activities shall cease within 100 feet of the find. Prehistoric archaeological indicators include: obsidian or chert flaked-stone tools and waste flakes (debitage) resulting from the toolmaking process; bedrock

outcrops and boulders with mortar cups; ground stone implements (grinding slabs, mortars and pestles); and locally darkened midden soils containing any of the previously listed items plus fragments of faunal bone or shell, fire-affected rocks, and/or unusual amounts of charcoal. Historic period site indicators generally include: fragments of glass, ceramic and metal objects; milled and split lumber; and structural and feature remnants such as building foundations, privy pits, wells, irrigation ditches, and refuse dumps; and old trails. The Lytton Rancheria shall be notified of the discovery and a professional archeologist (or paleontologist, as appropriate) shall be retained to evaluate the find and recommend appropriate treatment measures in consultation with the Lytton Rancheria. Project-related activities shall not resume within 100 feet of the find until all mitigation measures have been approved and completed.

- If suspected human remains are encountered, work should halt in the vicinity and the Sonoma County Coroner should be notified immediately. At the same time, the Lead Agency and a qualified archaeologist should be contacted to evaluate the find. If human remains are determined to be of Native American origin, the Coroner must notify the NAHC within 24 hours of this identification. Construction activities shall not resume within 100 feet of the find until the NAHC-designated Most Likely Descendant (MLD) and the Tribe approve and implement a strategy for the appropriate disposition of the remains.

5.6 SOCIOECONOMIC CONDITIONS/ ENVIRONMENTAL JUSTICE

No mitigation is necessary for Alternatives A, B, C, or D.

5.7 TRANSPORTATION AND CIRCULATION

The following mitigation measures shall be implemented for Alternatives A, B, or C due to potential impacts for the cumulative plus project traffic conditions in the Year 2030.

- The Tribe shall pay a proportionate share for necessary intersection improvements at the intersection of Windsor River Road and Bell Road. The improvements shall include, but not limited to, installation of a traffic signal if and when the Town of Windsor determines a signal is warranted.
- The Tribe shall pay a proportionate share for intersection improvements at the intersection of Windsor River Road and the Northbound U.S. 101 Off-Ramp at Lakewood Drive. Improvements would include the construction of an additional southbound left and right turn lane and the restriping of the northbound U.S. 101 off-ramp to include a shared through-left lane.

5.8 LAND USE

No mitigation would be necessary for Alternatives A, B, C, or D.

5.9 PUBLIC SERVICES

Implementation of the protective measures and BMPs described in **Section 2.0**, along with the mitigation measures below, would ensure that the construction and operation of Alternatives A, B, and C would have a less than significant impact on fire and emergency services.

- To minimize the risk of fire and the need for fire protection services during construction, any construction equipment that normally includes a spark arrester shall be equipped with a spark arrester in good working order. This includes, but is not limited to, vehicles, heavy equipment, and chainsaws.
- During construction, staging areas, welding areas, or areas slated for development using spark-producing equipment would be cleared of dried vegetation or other materials that could serve as fire fuel. To the extent feasible, the contractor would keep these areas clear of combustible materials in order to maintain a firebreak.
- Fire extinguishers shall be maintained onsite and inspected on a regular basis.
- An evacuation plan shall be developed for the proposed development in the event of a fire emergency.

If Alternative A is selected, the Tribe and the Town of Windsor shall enter into a mutually agreeable binding service contract for the provision of water and sewer service to the project.

5.10 NOISE

Implementation of the protective measures and BMPs described in **Section 2.0**, along with the mitigation measures below, would ensure that the construction and operation of Alternatives A, B, and C would have a less than significant impact on Noise.

- The Tribe shall restrict construction activities to normal daytime hours (7 a.m. to 7 p.m.), Monday through Saturday, with no work performed on Sundays.
- The Tribe shall ensure that construction equipment used at the project site shall be equipped with the best available noise reduction technology feasible.

5.11 HAZARDOUS MATERIALS

The mitigation measures listed below are recommended to reduce potential impacts associated with construction and operation of Alternatives A, B, and C.

- Potentially hazardous materials, including fuels, shall be stored away from drainages and secondary containment shall be provided for all hazardous materials during construction.
- A spill prevention and countermeasure plan shall be developed which shall identify proper storage, collection, and disposal measures for potential pollutants (such as fuel storage tanks) used onsite, as well as the proper procedures for cleaning up and reporting of any spills.
- Vehicles and equipment used during construction shall be provided proper and timely maintenance to reduce potential for mechanical breakdowns leading to a spill of materials into water bodies. Maintenance and fueling shall be conducted in an area that meets the criteria set forth in the spill prevention plan.
- Before development begins on the property, all items of non-hazardous debris shall be removed from the site and properly disposed of or recycled at an appropriate off-site facility.
- A hazardous materials storage and disposal plan shall be prepared that contains an inventory of hazardous materials stored and used on site, maintains an emergency response plan for a release and disposal of unused hazardous materials, and provides provisions specifying employee training in safety and emergency response procedures.

5.12 VISUAL RESOURCES

No mitigation is necessary for Alternatives A, B, or C.