

4.0 LIST OF MITIGATION MEASURES

4.1 SUMMARY OF MITIGATION MEASURES

AESTHETICS (SECTION 3.1)

MM 3.1.1

The City shall develop and implement a tree protection plan that shall include a list of native and non-native trees to be preserved within the project area, including the species, condition, and dbh of each tree, and an exhibit depicting the location of those trees. All oak trees that are 6 inches dbh or larger on the project site and other trees that have been selected for preservation, all portions of adjacent off-site native trees which have driplines that extend onto the project site, and all off-site native trees which may be impacted by utility installation and/or improvements associated with this project, shall be protected as follows:

- A circle with a radius measurement from the trunk of the tree to the tip of its longest limb shall constitute the dripline protection area of each tree. Limbs must not be cut back in order to change the dripline. The area beneath the dripline is a critical portion of the root zone and defines the minimum protected area of each tree. Removing limbs that make up the dripline does not change the protected area.
- Any protected trees on the site that require pruning shall be pruned by a certified arborist prior to the start of construction work. All pruning shall be in accordance with American National Standards Institute (ANSI) A300 pruning standards and the International Society of Arboriculture (ISA) "Tree Pruning Guidelines."
- Before initiating any construction activity near protected trees, install chain link fencing or a similar protective barrier at least one foot outside the dripline of each tree or as far as possible from the tree trunk where the existing road is within the tree dripline. The barrier fencing will remain in place for the duration of construction activity.
- No signs, ropes, cables (except those which may be installed by a certified arborist to provide limb support) or any other items shall be attached to the trees. Small metallic numbering tags for the purpose of preparing tree reports and inventories shall be allowed.
- No vehicles, construction equipment, mobile home/office, supplies, materials or facilities shall be driven, parked, stockpiled or located within the driplines of protected trees.
- No grading (grade cuts or fills) shall be allowed within the driplines of protected trees except where paved roadway already exists and where it can be demonstrated that the health of the tree will not be significantly impacted. Removal of pavement and grading within the driplines of oak trees shall be conducted in the presence of a certified arborist to ensure that damage and stress to any oak tree is minimized.
- Drainage patterns on the site shall not be modified so that water collects or stands within, or is diverted across, the dripline of any protected tree.

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- No trenching shall be allowed within the driplines of protected trees. If it is absolutely necessary to install underground utilities within the dripline of a protected tree, the utility line shall be bored and jacked under the supervision of a certified arborist.
- The construction of impervious surfaces within the driplines of protected trees shall be stringently minimized. When it is absolutely necessary, a piped aeration system per City standard detail shall be installed under the supervision of a certified arborist.
- No sprinkler or irrigation system shall be installed in such a manner that it sprays water or requires trenching within the driplines of protected trees. An above-ground drip irrigation system is recommended.
- Landscaping beneath oak trees may include non-plant materials such as bark mulch, wood chips, boulders, etc. The only plant species that shall be planted within the driplines of oak trees are those which are tolerant of the natural semi-arid environs of the trees. Limited drip irrigation approximately twice per summer is recommended for the understory plants.
- Prior to the installation of new asphalt, weed control chemicals shall not be applied where they can leach into the dripline of any protected trees.
- During construction, the frequency and amount of watering for protected trees shall not differ from that received prior to construction.

Timing/Implementation: *The tree protection plan shall be prepared during final project design, and all protection measures shall be incorporated into the construction contract. Implementation of measures shall be monitored by the City Inspector during project construction.*

Enforcement/Monitoring: *City of Elk Grove Development Services*

BIOLOGICAL RESOURCES (SECTION 3.4)

- MM 3.4.1** Prior to any vegetation removal or ground disturbing activities, focused surveys shall be conducted to determine the presence of special-status plant species with potential to occur in the construction zone, including staging areas. Surveys shall be conducted in accordance with CDFG *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered plants and Natural Communities* (CDFG 2000). These guidelines require rare plant surveys to be conducted at the proper time of year when rare or endangered species are both "evident" and identifiable. Field surveys shall be scheduled to coincide with known blooming periods, and/or during periods of physiological development that are necessary to identify the plant species of concern. If no special-status plant species are found then the project will not have any impacts to the species and no additional mitigation measures are necessary. If any of the species are found on-site and cannot be avoided, the City shall consult with the USFWS and/or CDFG, as applicable, to determine appropriate avoidance and mitigation for special-status plants.

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Timing/Implementation: Surveys shall be conducted, and any mitigation measures identified, prior to project construction.

Enforcement/Monitoring: City of Elk Grove Development Services

MM 3.4.2

A focused survey for northwestern pond turtle shall be conducted by a qualified biologist within 30 days prior to the onset of construction activities to determine presence or absence of this species within a 100-foot radius of the project construction zone, including staging areas. If construction is planned after April 1st, this survey should include looking for turtle nests. If a nest is found within a 100-foot radius of the construction zone, construction shall not take place within 100 feet (30 meters) of the nest until the turtles have hatched, or the eggs have been moved to an appropriate location under consultation with CDFG.

Timing/Implementation: The City shall incorporate requirements into contract plans. Surveys shall be conducted prior to any construction activities. If turtles are found, monitoring activities shall be conducted throughout construction until area is unoccupied.

Enforcement/Monitoring: City of Elk Grove Development Services

MM 3.4.3

Unless otherwise approved by CDFG, construction shall be avoided when adults and hatchlings are overwintering (October to February), due to the likelihood of turtle adults and juveniles being present in upland habitats within the construction zone, including staging areas. If construction activities must occur during this time frame, a survey for overwintering locations shall be conducted within two weeks prior to construction. If this species is found overwintering within the PSA, den locations shall be avoided until the area is unoccupied, as determined by a qualified biologist.

Timing/Implementation: The City shall incorporate requirements into contract plans. If construction occurs between October and February, surveys shall be conducted prior to any construction activities in upland habitats within the construction zone. If turtles are found, monitoring activities shall be conducted throughout construction until area is unoccupied.

Enforcement/Monitoring: City of Elk Grove Development Services

MM 3.4.4

A worker awareness program shall be established and implemented prior to construction. The program shall include, at a minimum, species identification, a description of suitable habitat for special status species occurring within the construction zone, including staging areas, and measures to implement in the event that this species is found during construction. The program shall be presented to all members of the construction crew. In the event that a turtle is found during project implementation, construction activities shall stop until the turtle is moved by a qualified biologist to a safe location outside of the construction zone.

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Timing/Implementation: The City shall incorporate requirements into the contract plans. A qualified biologist shall implement a worker awareness program prior to the start of construction. The City's construction inspector shall monitor to ensure that measures are implemented during construction.

Enforcement/Monitoring: City of Elk Grove Development Services

MM 3.4.5

The City shall implement the USFWS's *Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake (*Thamnophis gigas*) Habitat* (USFWS 1999). The standard avoidance measures include, but are not limited to, minimizing disturbed areas to only those required to complete project construction, limiting construction windows to warm months when snakes are more likely to be active and be able to avoid construction activities, and restoration of the construction area after completion of construction.

Timing/Implementation: The City shall ensure that avoidance measures are incorporated into construction contracts prior to construction. The City's construction inspector shall monitor to ensure that measures are implemented during project construction.

Enforcement/Monitoring: City of Elk Grove Development Services

MM 3.4.6

To compensate for temporary impacts to giant garter snake habitat within and near Laguna Creek, such as the loss of streamside vegetation due to construction activities, a creek restoration plan will be implemented to restore the areas of Laguna Creek that are temporarily impacted by project construction to natural conditions. The creek restoration plan will be developed by a qualified biologist experienced in restoring wetland and giant garter snake habitat. The plan shall include the following:

- A description of the disturbed area, site-specific recommendations for preparation of the disturbed area after construction to ready it for restoration (i.e., re-contouring of channel and associated uplands to return them to pre-project conditions, minor compacting of soil to prepare channel bed for planting, etc.);
- Identification of the variety and number of appropriate wetland plants to be planted during restoration (it is anticipated that the area will be re-planted with native wetland plants that were present in the area before project construction);
- Recommendations for planting timing and/or supplemental irrigation to ensure success of restoration plantings; and
- A plan for monitoring for success after restoration.

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Timing/Implementation: The restoration plan shall be prepared and approved by the USACE and USFWS prior to construction. Restoration activities shall be implemented and monitored following construction.

Enforcement/Monitoring: City of Elk Grove Development Services

MM 3.4.7

Per the requirements of the Programmatic Biological Opinion, temporary impact areas will be restored to pre-project conditions within the same season or, at most, the same calendar year. Monitoring of restored habitat and the construction zone will take place for one calendar year and will include a photo documentation report containing pre- and post-construction photos, to be submitted to USFWS one year from the date the restoration was completed. The restoration and monitoring shall follow the *Guidelines for Restoration and/or Replacement of Giant Garter Snake Habitat as outlined in the Programmatic Biological Opinion (USFWS 1997)*.

Timing/Implementation: Photos shall be taken prior to and following construction. Restoration shall be implemented and monitored following construction.

Enforcement/Monitoring: City of Elk Grove Development Services

MM 3.4.8

Permanent impacts to aquatic and upland snake habitat from the proposed project shall be replaced at a 3:1 ratio. It is anticipated that the restoration of 0.133 acres of upland habitat and 0.082 acres of aquatic habitat under **MM 3.4.6** will fully compensate for the loss of both aquatic and upland habitat; however, if this restoration does not cover requirements for habitat replacement compensatory mitigation credits shall be purchased from a USFWS-approved mitigation bank. Final determination as to whether compensatory mitigation credits will be purchased from a mitigation bank or if an in-lieu fee will be paid, and final determination of the ratio of compensatory mitigation will be made by the USFWS Biologist during consultation with USFWS under Section 7 of FESA.

Timing/Implementation: Consultation and identification of required mitigation shall occur prior to construction. Implementation of required mitigation and monitoring shall occur prior to, during, and following construction.

Enforcement/Monitoring: City of Elk Grove Development Services

MM 3.4.9

Prior to initiating any construction activity, the City shall install bright orange construction fencing (Environmental Sensitive Area (ESA) fencing) around the perimeter of aquatic giant garter snake habitat including seasonal wetlands and the perennial creek within the vicinity of the construction zone, including staging areas. During construction activities including the installation of the center abutment for the construction of the new bridge, the construction crew will avoid all giant garter snake aquatic habitat. The seasonal wetland adjacent to the center abutment shall be fenced off and construction crews

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will not enter the area. The barrier fencing will remain in place for the duration of construction activity. Reference to this requirement shall be included in the construction specifications.

Timing/Implementation: *The City shall ensure that the fencing requirements and specifications are incorporated into the contract plans during project design and the City's construction inspector shall monitor fence installation prior to beginning construction activities.*

Enforcement/Monitoring: *City of Elk Grove Development Services*

MM 3.4.10

The City shall conduct construction activities and vegetation clearing (including shrubs and bushes) to avoid nesting activities, where feasible. Because it is not feasible to conduct construction activities outside of the nesting season (typically February 1-August 30), preconstruction surveys for nesting raptors and migratory birds shall be conducted no more than two weeks of construction. The qualified biologist shall survey the construction zone, including staging areas, and a 500-foot radius surrounding the construction zone to determine whether the activities taking place have the potential to disturb or otherwise harm nesting birds.

If an active Swainson's hawk nest is located within a 500-foot radius around the construction zone, including staging areas, or if any other active raptor nest is located within a 100-foot radius or if an active migratory bird nest is located within a 50-foot radius and construction must take place during the breeding season; a buffer zone shall be established by a qualified biologist and confirmed by the appropriate resource agency. A qualified wildlife biologist shall monitor the nest to determine when the young have fledged and submit bi-weekly reports to the City Planning Department throughout the nesting season. The biological monitor shall have the authority to cease construction if there is any sign of distress to the raptor or migratory bird. Reference to this requirement and the MBTA shall be included in the construction specifications.

Timing/Implementation: *Survey requirements shall be incorporated into contract plans during project design. Surveys shall be conducted no more than two weeks of construction. Any nests found shall be monitored throughout construction until there is not danger to nesting birds.*

Enforcement/Monitoring: *City of Elk Grove Development Services*

MM 3.4.11

As part of the 1602 Streambed Alteration Agreement from CDFG, the City shall prepare and implement a vegetation mitigation and monitoring plan for disturbed vegetation. Ratios for mitigation will be determined by CDFG at a minimum of 1:1 to ensure no net loss of vegetation within CDFG jurisdiction.

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Timing/Implementation: The restoration plan shall be prepared and approved by CDFG prior to construction. Restoration activities shall be implemented and monitored following construction.

Enforcement/Monitoring: City of Elk Grove Development Services

MM 3.4.12

Before initiating any construction activity near jurisdictional features, the City shall install bright orange construction fencing (Environmental Sensitive Area (ESA) fencing) or a similar protective barrier around the perimeter of all jurisdictional features within the vicinity of the construction zone, including staging areas. During construction activities including the installation of the center abutment for the construction of the new bridge, the construction crew will avoid all jurisdictional features. The seasonal wetland adjacent to the center abutment shall be fenced off and construction crews will not enter the area. The barrier fencing will remain in place for the duration of construction activity. Reference to this requirement shall be included in the construction specifications.

Timing/Implementation: The City shall ensure that the fencing requirements and specifications are incorporated into the contract plans during project design and the City's construction inspector shall monitor fence installation prior to beginning construction activities.

Enforcement/Monitoring: City of Elk Grove Development Services

MM 3.4.13

For temporary removal of 0.046 acre of jurisdictional seasonal wetland and 0.006 acre of jurisdictional perennial creek, the City shall restore the area to pre-construction conditions. This may require revegetation of the area using native vegetation appropriate for habitat. Restoration plans shall be coordinated by a qualified biologist pursuant to, and through consultation with, USACE.

Timing/Implementation: The restoration plan shall be developed and approved by USACE prior to construction and shall be implemented and monitored following construction

Enforcement/Monitoring: City of Elk Grove Development Services

NOISE (SECTION 3.11)

MM 3.11.1

Noise-generating construction operations shall be limited to between the hours of 7 a.m. and 7 p.m. in accordance with the Elk Grove General Plan Noise Policy NO-3-Action 1.

Timing/Implementation: Requirements shall be incorporated into contract plans. The City's construction inspector shall monitor noise-generating operations throughout construction.

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- Enforcement/Monitoring:* City of Elk Grove Development Services
- MM 3.11.2** Construction equipment and equipment staging areas shall be located at the furthest distance possible from adjacent land uses.
- Timing/Implementation:* Requirements shall be incorporated into contract plans. The City's construction inspector shall monitor equipment storage locations during construction.
- Enforcement/Monitoring:* City of Elk Grove Development Services
- MM 3.11.3** Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.
- Timing/Implementation:* Requirements shall be incorporated into contract plans. The City's construction inspector shall monitor maintenance of noise-generating equipment throughout construction.
- Enforcement/Monitoring:* City of Elk Grove Development Services
- MM 3.11.4** When not in use, motorized construction equipment shall not be left idling.
- Timing/Implementation:* Requirements shall be incorporated into contract plans. The City's construction inspector shall monitor equipment operations throughout construction.
- Enforcement/Monitoring:* City of Elk Grove Development Services