Stantec

Memo

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	Terra-Gen Development Company, LLC		Stantec Consulting Services Inc.
File:	185703780	Date:	October 25, 2017

Reference: Habitat Assessment and Biological Survey Report for Proposed Meteorological Tower Sites Within the Proposed King Flat Meteorological Tower Project Study Area, Yolo County, California

INTRODUCTION

Terra-Gen Development Company, LLC (Terra-Gen) is evaluating three (3) proposed Meteorological Tower (Met Tower) sites within the proposed King Flat Meteorological Tower Project (Project). The Project is located in northwestern Yolo County, California. The proposed Project is located on privately owned lands located approximately 3.5 miles east of State Route 16 and Cache Creek, and approximately 8.5 miles west of the town of Dunnigan (Figure 1 Project Location and Proposed Met Tower Locations). As part of the California Environmental Quality Act (CEQA) compliance process to cover the installation of the proposed Met Towers, Yolo County, the lead agency for CEQA, has requested that a biological resources assessment, including reconnaissance-level biological field surveys, be conducted for each of the proposed Met Tower locations. This report outlines the methodologies and results of the biological resources surveys and assessment for each of the proposed Met Tower locations.

REGULATORY OVERVIEW

FEDERAL REGUATIONS

Endangered Species Act of 1973

The Federal Endangered Species Act (ESA) was passed by Congress in 1973 to protect and recover imperiled species and the habitat upon which they depend. The ESA is administered by the USFWS. Under the ESA, protected species are either listed as "endangered", in danger of extinction throughout all or a significant region of the species range; or as "threatened", likely to become endangered within the foreseeable future (USFWS 2015). "'Take' is to hunt, pursue, catch, capture, or kill; or attempt to hunt, pursue, catch, capture, or kill" an endangered or threatened species. The ESA also designates "candidate" species as those plants and animals that the USFWS has sufficient data on their biological status to propose them to be listed under the ESA (USFWS 2015). The ESA mandates the protection of federally listed species and the habitats which they depend (50 Code of Federal Regulations [CFR] 17.12 for listed plants, 50 CFR 17.11 for listed animals, and various notices in the Federal Register for proposed species).

Consultation with the USFWS would be necessary if a proposed action of a project has the potential to affect federally listed species, such as California tiger salamander (*Ambystoma californiense,* CTS), as well as suitable habitat for those species including both breeding and upland habitat. This consultation would proceed under Section 7 of the ESA if a federal action is part of the proposed

action, or proceed through Section 10 of the ESA if no such nexus were available (USFWS 2015).

Migratory Bird Treaty Act of 1918 and the Bald and Gold Eagle Protection Act

The Migratory Bird Treaty Act (MBTA) (16 USC C Section 703-711) and the Bald and Golden Eagle Protection Act (BAGEPA) (16 USC Section 668) protect specific species of birds and prohibits "take" (i.e., harm or harassment). The MBTA protects migrant bird species from "take" through setting hunting limits and seasons, and protecting occupied nests and eggs (USFWS 2017a). BAGEPA prohibits the take or commerce of any part of the bald or golden eagle (USFWS 2017a). The USFWS administers both Acts and reviews actions that may affect species protected under each Act.

Clean Water Act Section 401

The U.S. Environmental Protection Agency (EPA) regulates surface water quality in waters of the United States under Section 401 of the Clean Water Act (CWA) and in California this authority is delegated to the State's Regional Water Quality Control Boards (RWQCB). CWA Section 401 Water Quality Certification provides states and authorized tribes with an effective tool to help protect the physical, chemical, and biological integrity of water quality, by providing them an opportunity to address the aquatic resource impacts of federally issued permits and licenses. CWA 401 states that no federal permit or license can be issued if a proposed action may result in a discharge to waters of U.S., unless the RWQCB certifies that the discharge is consistent with standards and other water quality goals, or waives certification (EPA 2017). CWA 401 compliance is required for any project that produces a federal action with construction that could have an impact to surface water quality.

Clean Water Act- Section 404

The USACE and the EPA regulate the discharge of dredge or fill material into waters of the U.S. under Section 404 of the CWA. Waters of the U.S. include wetlands, lakes, rivers, streams, and their tributaries. Wetlands are defined, for regulatory purposes, as areas inundated or saturated by surface, or groundwater; at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated solid conditions (33 CFR 328.3, 40 CFR 230.3) (EPA 2016). If a project discharges any fill materials into water of the U.S., including wetlands, before and after the proposed project actions, then a permit must be obtained from the USACE.

STATE REGULATIONS

California Endangered Species Act

The CDFW has jurisdiction over plant and wildlife species listed as threatened or endangered under Section 2080 of the California Department of Fish and Game (CDFG) Code. The California Endangered Species Act (CESA) prohibits "take" of state-listed threatened or endangered species. The state Act differs from the federal Act in that it does not include habitat destruction in its definition of "take". CDFW defines "take" as- to "hunt, pursue, catch, capture, or kill, or attempt to

hunt, pursue, catch, capture, or kill." CDFW may authorize "take" under the CESA through Section 2081 of the CDFG Code. If the results of a biological assessment indicate that a state-listed species could be affected by a proposed project, then under Section 2081, CDFW could authorize take of species listed as endangered, threatened, candidate, or a rare plant, if that take is incidental to otherwise lawful activities and if certain conditions are met (CDFW 2017a).

The State of California designates Species of Special Concern (SSC) as wildlife and plant species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational and/or educational values. These species do not have the same legal protection as listed species, but may be added to official lists in the future (CDFW 2017b).

The Native Plant Protection Act: CDFG Code, Section 1900 et seq.

The Native Plant Protection Act (NPPA) was enacted in 1977 and is administered by CDFW, CDFG Code, Section 1900 et seq. The NPPA prohibits "take" of endangered, threatened, or rare plant species native to California, with the exception of special criteria identified in the CDFW Act Code. A "native plant" means a plant growing in a wild uncultivated state which is normally found native to the plant life of the state. Under the CDFG Code, species become endangered, threatened, or rare when the plants' prospects of survival and reproduction are in immediate jeopardy for one or more causes (California Legislative Information 2017). "Rare" species can be defined as species that are: broadly distributed but never abundant where found, narrowly distributed or clumped yet abundant where found, and/or narrowly distributed or clumped and not abundant where found. If potential impacts are identified for a proposed project activity, then consultation with CDFW, permitting, and/or other mitigation may be required. Endangered, threatened, and/or rare species can be identified through the CNPS CRPR (CNPS 2017a).

Nesting Migratory Bird and Raptors: CDFG Code, Sections 3503, 3503.5, and 3800

Nesting migratory birds and raptors are protected under CDFG Code, Sections 3503, 3503.5 and 3800; which prohibit the "take", possession, or destruction of birds, their nests, or eggs. Implementation of "take" provisions require that proposed Project-related disturbance, within active nesting territories, be reduced or eliminated during critical phases of the nesting cycle (approximately February 15 – August 31 in the proposed Project area). Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young), or the loss of habitat upon which birds are dependent, is considered "taking", and is potentially punishable by fines and/or imprisonment (California Legislative Information 2017). Such taking would also violate federal law protecting migratory birds under the MBTA.

California Environmental Quality Act: CEQA Guidelines, Section 15380

The CEQA provides protection for federal and/or state listed species, as well as species not listed federally or by the state that may be considered rare, threatened, or endangered. If the species can be shown to meet specific criteria for listing outlined in CEQA Guidelines subsection 15380 (b).

Species that meet these criteria can include "candidate species", species "proposed for listing", and "species of special concern". Plants appearing on CNPS CRPR are considered to meet CEQA's Section 15380 criteria. Impacts to these species would therefore be considered "significant" requiring mitigation (CDFW 2017c).

Section 15380 was included to address a potential situation in which a public agency is to review a proposed project that may have a significant effect on, for example a "candidate species", which has not yet been listed by the USFWS or CDFW. Therefore, CEQA enables an agency to protect a species from significant project impacts until the respective government agencies have had an opportunity to list the species as protected, if warranted (CDFW 2017c).

Lake and Streambed Alteration Agreement: CDFG Code, Section 1600-1616

To protect, manage, and conserve rivers, streams, lakes, wetlands, etc., CDFW has jurisdictional authority, under CDFG Code Sections 1600-1616, to regulate all work under the jurisdiction of the State of California. Such work includes those actions that would substantially divert, obstruct, or change the natural flow of a river, stream, or lake; substantially change the bed, channel, or bank of a river, stream, or lake; or use material from a streambed. In practice, CDFW marks its jurisdictional limit at the top of the stream or lake bank, or the outer edge of the riparian vegetation (where present), and sometimes extends its jurisdiction to the edge of the 100-year floodplain (CDFW 2017d). Because riparian habitats do not always support wetland hydrology or hydric soils, wetland boundaries, as defined by CWA Section 404, sometimes include only portions of the riparian habitat adjacent to a river, stream, or lake. Therefore, jurisdictional boundaries under Section 1600 may encompass a greater area than those regulated under CWA Section 404.

Porter-Cologne Water Quality Control Act (Porter-Cologne Act) (California Water Code § 13000 et. seq.)

This act delegates responsibility to the State Water Resource Control Board (SWRCB) for water rights and water quality protection and directs the nine statewide RWQCBs to develop and enforce water quality standards within their jurisdiction. The Porter-Cologne Act requires any entity discharging waste, or proposing to discharge waste, within any region that could affect the quality of the "waters of the state" to file a "report of waste discharge" with the appropriate RWQCB. The appropriate RWQCB then must issue a permit, referred to as a waste discharge requirement (WDR). WDRs implement water quality control plans and take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, and the need to prevent nuisances (California Water Code Section 13263, State Board 2017).

LOCATION REGULATIONS - YOLO COUNTY GENERAL PLAN

The following Goals, Policies, and Implementation Programs in Conservation and Open Space Element that would pertain to the installation of the proposed Met Towers are included below (Yolo County 2009):

Goal CO-2 Biological Resources. Protect and enhance biological resources through the conservation, maintenance, and restoration of key habitat areas and corresponding connections that represent the diverse geography, topography, biological communities, and ecological integrity of the landscape.

Policy CO-2.1 Consider and maintain the ecological function of landscapes, connecting features, watersheds, and wildlife movement corridors.

Policy CO-2.10 Encourage the restoration of native habitat.

Policy CO-2.11 Ensure that open space buffers are provided between sensitive habitat and planned development.

Policy CO-20 Encourage the use of wildlife-friendly Best Management Practices to minimize unintentional killing of wildlife, such as restricting mowing during nesting season for ground-nesting birds or draining of flooded fields before fledging of wetland species.

Policy CO-2.22 Prohibit development within a minimum of 100 feet from the top of banks for all lakes, perennial ponds, rivers, creeks, sloughs, and perennial streams. A larger setback is preferred. The setback will allow for fire and flood protection, a natural riparian corridor (or wetland vegetation), a planned recreational trail where applicable, and vegetated landscape for stormwater to pass through before it enters the water body. Recreational trails and other features established in the setback should be unpaved and located along the outside of the riparian corridors whenever possible to minimize intrusions and maintain the integrity of the riparian habitat. Exceptions to this action include irrigation pumps, roads and bridges, levees, docks, public boat ramps, and similar uses, so long as these uses are sited and operated in a manner that minimizes impacts to aquatic and riparian features.

Policy CO-2.34 Recognize, protect and enhance the habitat value and role of wildlife migration corridors for the Sacramento River, Putah Creek, Willow Slough, the Blue Ridge, the Capay Hills, Dunnigan Hills and Cache Creek.

Policy CO-2.40 Preserve grassland habitat within 2,100 feet of documented California tiger salamander breeding ponds or implement required mitigation (equivalent or more stringent) as imposed by appropriate agencies or through the County HCP/NCCP, to fully mitigate impacts consistent with local, State, and federal requirements. Implementation and funding of mitigation measures for projects that will be developed in phases over time may also be phased, with the applicable mitigation being implemented and funded prior to the final approval of each phase or sub-phase.

Policy CO-2.41 Require that impacts to species listed under the State or federal Endangered Species Acts, or species identified as special-status by the resource agencies, be avoided to the greatest feasible extent. If avoidance is not possible, fully mitigate impacts consistent with applicable local, State, and Federal requirements.

Policy CO-2.42 Projects that would impact Swainson's hawk foraging habitat shall participate in the

Agreement Regarding Mitigation for Impacts to Swainson's Hawk Foraging Habitat in Yolo County entered into by the CDFG and the Yolo County HIP/NCCP Joint Powers Agency, or satisfy other subsequent adopted mitigation requirements consistent with applicable local, State, and federal requirements.

Policy CO-2.43 Projects that have the potential to impact California tiger salamander breeding or terrestrial habitat in the Dunnigan Hills area, shall conduct a project-level biological assessment to determine the potential to impact California tiger salamander upland or breeding habitat (if such assessment has not already been done as part of an approved HCP/NCCP). Such an assessment will be required for all projects located within 1.3 miles of a known or potential breeding site. Development activities that would result in isolation of the breeding or upland habitat will be required to mitigate for such impacts. Mitigation shall consist of two components: 1) habitat preservation and enhancement of suitable upland habitat, and 2) preservation and construction of new breeding habitat. CTS upland habitat must be mitigated at a ratio of 3:1 (preserved: Impacted), located within 2,100 feet of an occupied habitat, and include at least one suitable breeding pond. Equivalent or more stringent mitigation may be implemented as determined by trustee and responsible agencies. Mitigation must be coordinated with the HCP/NCCP program if adopted.

Habitat Conservation Plan/Natural Communities Conservation Plan

Yolo County (County) is a member of the Yolo County Habitat joint powers authority (JPA), which is responsible for developing a combined Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP), known as the Yolo Natural Heritage Program (Yolo NHP). Habitat conservation plans identify the most biologically significant regions and outline measures to protect the ecological integrity of valuable habitat areas. Conservation plans are required to address special status species, which are those plants and animals that are considered sufficiently rare by the scientific community and qualify for legal protection under State and/or federal Endangered Species Acts. The purpose of the Yolo NHP is to identify and protect the County's most biologically significant regions and most valuable habitat areas, in amounts and locations sufficient to sustain target species. The JPA also manages the Swainson's hawk Interim Fee Mitigation Program, which purchases conservation easements to provide habitat for the State-threatened Swainson's hawk (*Buteo swainsoni*) (Yolo Habitat Conservancy 2017).

ENVIRONMENTAL SETTING

Yolo County includes a portion of the Sacramento Valley and the eastern edge of the Inner North Coast Ranges. The eastern and southern portions of the County are located on the relatively level valley floor. The north-central County includes Dunnigan Hills, and the western portion rises into the Blue Ridge and Rocky Ridge of the inner north Coast Ranges. The Capay Valley lies between Blue Ridge and the Capay Hills, where the proposed Project area is located (Yolo County 2009).

Yolo County has a Mediterranean climate characterized by hot, dry summers and temperate, wet winters. The northern and central areas of Yolo County experience hot summers and moderately cold winters, while the southeastern County receives marine air influence from the San Joaquin-Sacramento Delta regions to the south which reduces the temperature extremes of the valley (Yolo County 2009).

Generally, Yolo County is comprised of agricultural lands in the lower elevations and natural lands in the western part of the County with few riparian corridors, oak woodlands, and wetlands. The most vegetation types include agricultural lands, grasslands, and woodlands; all of which may include a variety of plant communities and wildlife habitats (Yolo County 2009). The proposed Project area includes a mix of grassland and spacious oak woodland vegetation communities grazed by cattle. In addition, the proposed Project site includes transitional communities between woodland and prairie grassland types including areas of chaparral and densely grazed areas including manmade stock ponds.

STUDY METHODS

Prior to conducting reconnaissance-level biological resource surveys of the three (3) proposed Met Tower locations in the Project area, Stantec Consulting Services Inc (Stantec) conducted a desktop analysis of the Project area to evaluate the potential for special status species to occur within the proposed Met Tower sites and access to each site. A search of the California Natural Diversity Data Base (CNDDB) was conducted for the proposed Met Tower locations to document known occurrences of special status species within five miles of the three (3) Met Tower sites surveyed. The results of the CNDDB search are documented in Figure 1.

On September 26, 2017 and October 11, 2017, a qualified Stantec biologist conducted a reconnaissance-level biological survey within the proposed area of disturbance of the three (3) proposed Met Tower locations. A survey of the entire proposed disturbance area at each of the proposed Met Tower sites was completed on foot to identify general habitat characteristics within each of the three proposed Met Tower locations and surrounding areas. Habitats within and adjacent to each proposed Met Tower site, including the presence of streams, wetlands, and other sensitive habitats, including potential upland habitat for the State and federally threatened California tiger salamander (*Ambystoma californiense*, CTS), were identified. Photos were taken in each cardinal direction from each of the three (3) proposed Met Tower locations and they are included in the Results Section below. The presence of special status plants, wildlife, as well as potential nesting habitat for raptors and other migratory birds was also documented.

RESULTS

The following species were identified by a search of the CNDDB within 5 miles of each of the proposed Met Tower locations (state and federal listing included) and are considered special status species with a known or likely presence within the project area:

- Bank swallow (*Riparia riparia*) – State: Threatened, Federal: None
- California tiger salamander (*Ambystoma californiense*) – State: Threatened, Federal: Threatened
- Swainson's hawk (*Buteo swainsoni*) – State: Threatened, Federal: None
- Townsend's big-eared bat (*Corynorinus townsendii*) – State: SSC, Federal: None
- Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) – State: None, Federal: Threatened
- Western pond turtle (*Emys marmorata*) – State: SSC, Federal: None
- Western red bat (*Lasiurus blossevilii*) – State: SSC, Federal: None
- Western spadefoot (*Spea hammondii*) – State: SSC, Federal: None
- Adobe-lily (*Fritillaria pluriflora*) – State: CNPS 1B.2, Federal: None
- Bent-flowered fiddleneck (*Amsinckia lunaris*) – State: CNPS 1B.2, Federal: None
- Colusa layia (*Layia septentrionalis*) – State: CNPS 1B.2, Federal: None

In addition, the following special-status species have the potential to occur within the project area:

- Golden eagle (*Aguila chrysaetos*) – State: Fully Protected, Federal: None
- Prairie falcon (*Falco mexicanus*) – State: Watch List, Federal: None
- Burrowing owl (*Athene cunicularia*) – State: SSC, Federal: None

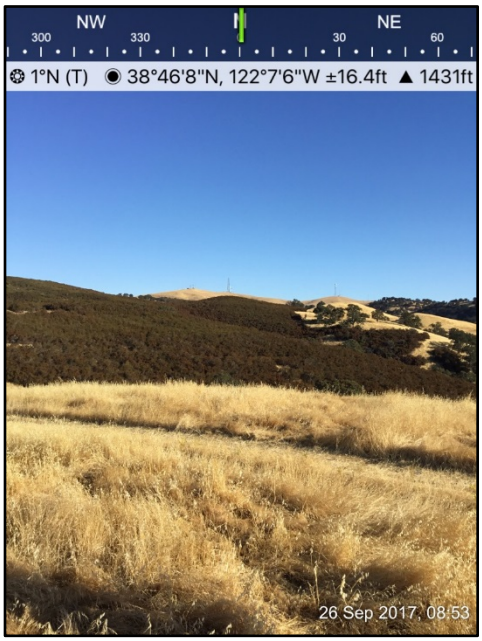
Designated Critical Habitat (DCH) for California tiger salamander (CTS) has been identified to the east of the project area; however, DCH for this species is located greater than 5 miles from the project area. There is no DCH for any species within the project area.

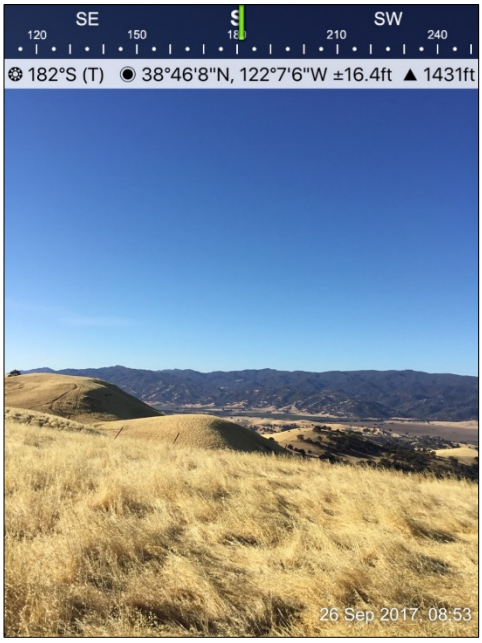
Proposed Met Tower 1

The proposed Met Tower 1 (MET 1) is located in the southern region of the King Flat proposed Project area (Latitude 38.769022° N, Longitude 122.118547° W). The general habitat consists of annual grassland and rolling hills with few oak trees. The dominant vegetation species include non-native grasses including wild oat and medusahead. No special status plants were observed during the survey. In addition, no wetlands, streams, vernal pools, drainages, VELB habitat, or raptor nesting habitat was observed at this proposed Met Tower location. No trees will be removed or impacted from the construction of this Met Tower. The area does include potential nesting habitat for ground nesting birds such as western meadowlark. The proposed Met Tower location is approximately 0.25 miles northwest from a stock pond, which may be potential breeding habitat for CTS. However, given the steep terrain, the tall characteristics of vegetation, lack of heavy grazing/mowing, and the lack of ground squirrel burrows, it is unlikely that CTS would inhabit/utilized with location for upland/aestivation habitat.

To reduce the potential impacts to nesting birds and raptors to less than significant, it is recommended that a pre-construction nesting bird survey be conducted if installation is to occur

during nesting season (approximately February 15 through August 31). To avoid and minimize potential impacts to CTS, a qualified biological monitor shall be present during installation of this proposed Met Tower to ensure that no ground disturbance will take place within or directly adjacent to small mammal burrows and medium to larger soil cracks. See Conclusion for further details regarding mitigation measures.

MET 1.1	MET 1.2
	
Proposed Met Tower 1 Site. View looking north.	Proposed Met Tower 1 Site. View looking east.

MET 1.3	MET 1.4
	
Proposed Met Tower 1 Site. View looking south.	Proposed Met Tower 1 Site. View looking west.

Proposed Met Tower 2

The proposed Met Tower 2 (MET 2) is located in the central region of the King Flat proposed Project area (Latitude 38.82688033° N, Longitude 122.14265861° W). The general habitat at this location consists of both oak woodland and chaparral. The dominant vegetation species include blue oak, foothill pine (*Pinus sabiniana*), mazanita, chamise (*Adenostoma fasciculatum*), and non-native grasses including wild oat and medusahead. No special status plants were observed during the survey. Several oak trees (approximately 8 – 15 inches DBH) as well as a foothill pine (approximately 20 inches DBH) are located adjacent to this Met Tower location; however, no trees will be removed or impacted from the construction of this Met Tower. These trees contain potential nesting habitat for both raptors and passerines. Areas of chamise also potentially impacted by the Met Tower installation contain potential nesting habitat for low- or ground-nesting birds such as spotted towhee (*Pipilo maculatus*). No drainages, wetlands, streams, vernal pools, or VELB habitat was observed in the area. Four stock ponds, potential breeding habitat for CTS, are located within 0.25 miles of the proposed Met Tower location. There is an abundance of ground squirrel burrows and medium to larger soil cracks within the vicinity of the proposed Met Tower location, which have the potential to support aestivating CTS; however, given the steep terrain and tall nature of the vegetation between the stock ponds and the Met Tower location make it unlikely that CTS would inhabit/utilize this location for upland/aestivation habitat. In addition, a burrowing owl (*Athene cunicularia*), a California Special Species of Concern, was observed inhabiting a burrow near one of the stock

ponds and could potentially use the California ground squirrel burrows within the proposed Met Tower location.

To reduce the potential impacts to nesting birds and raptors to less than significant, it is recommended that a pre-construction nesting bird survey be conducted if installation is to occur during nesting season (approximately February 15 through August 31). To avoid and minimize potential impacts to CTS, a qualified biological monitor shall be present during installation of this proposed Met Tower to ensure that no ground disturbance will take place within or directly adjacent to small mammal burrows and medium to larger soil cracks. See Conclusion for further details regarding mitigation measures.

MET 2.1	MET 2.2
	
Proposed Met Tower 2 Site. View looking north.	Proposed Met Tower 2 Site. View looking east.

MET 2.3	MET 2.4
	
Proposed Met Tower 2 Site. View looking south.	Proposed Met Tower 2 Site. View looking west.

Proposed Met Tower 3

The proposed Met Tower 3 (MET 3) is located in the northern region of the King Flat proposed Project area (Latitude 38.88899846° N, Longitude 122.17935134° W). Two radio towers are located near the proposed Met Tower location, one is approximately 650 feet to the south and the other is approximately 850 feet to the southeast. The general habitat within this proposed Met Tower site consists of annual grassland and rolling hills with blue oak (*Quercus douglasii*) and manzanita (*Arctostaphylos* sp.). The dominant vegetation species include non-native grasses including wild oat (*Avena* sp.) and medusahead (*Taeniatherum caput-medusae*), as well as other invasive species such as yellow star-thistle (*Centaurea solstitialis*). No special status plants were observed during the survey, though native forbs such as San Joaquin tarweed (*Holocarpha obconica*) were observed. A vegetated swale runs north to south within 100 feet of the proposed Met Tower location and joins an ephemeral drainage that runs east to west and is located downhill of the proposed Met Tower approximately 340 feet to the south. The vegetated swale and ephemeral drainage will be avoided during the installation of the proposed Met Tower, and therefore no impacts will occur to either feature.

Several blue oak trees ranging from 7–20 inches DBH are located adjacent to this Met Tower site. These oaks are potential nesting habitat for both raptors and passerines, and a few currently contain cavities suitable for nesting; however, these oak trees will not be removed or impacted by the construction of this Met Tower. This Met Tower location also includes potential nesting habitat for ground nesting birds such as western meadowlark (*Sturnella neglecta*). No wetlands, streams, vernal pools, or valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*, VELB) habitat was observed within the proposed Met Tower disturbance area. The proposed Met Tower location is approximately 0.25 miles east from a stock pond, which may contain potential breeding habitat for

CTS. CTS are known to travel up to approximately 1.24 miles (2 kilometers) from their breeding habitat into their upland habitat to seek refuge in California ground squirrel (*Otospermophilus beecheyi*) burrows during aestivation (CDFW and USFWS 2003). Given the moderate terrain, the patches of heavy grazing/mowing, and the low abundance of ground squirrel burrows and medium to larger soil cracks within the proposed Met Tower disturbance area, there is a low potential for CTS to inhabit/utilize this location for upland/aestivation habitat.

To reduce the potential impacts to nesting birds and raptors to less than significant, it is recommended that a pre-construction nesting bird survey be conducted if installation is to occur during nesting season (approximately February 15 through August 31). To avoid and minimize potential impacts to CTS, a qualified biological monitor shall be present during installation of this proposed Met Tower to ensure that no ground disturbance will take place within or directly adjacent to small mammal burrows and medium to larger soil cracks. See Conclusion for further details regarding mitigation measures.

MET 3.1	MET 3.2
	
Proposed Met Tower 3 Site. View looking north.	Proposed Met Tower 3 Site. View looking east.

MET 3.3	MET 3.4
	
Proposed Met Tower 3 Site. View looking south.	Proposed Met Tower 3 Site. View looking west.
MET 3.5	MET 3.6
	
Vegetated swale with San Joaquin tarweed. View looking north towards the proposed Met Tower 3 Site.	Ephemeral drainage at the base of vegetated swale, approximately 340 feet south of the proposed Met Tower 3 Site. View looking west.

MET 3.7	MET 3.8
	
Ephemeral drainage at the base of vegetated swale, approximately 340 feet south of the proposed Met Tower 3 Site. View looking west.	San Joaquin tarweed adjacent to the vegetated swales and drainage. Closest occurrence to the proposed Met Tower 3 Site is 100 feet to the southeast.

POTENTIAL PROJECT RELATED IMPACTS

Each proposed Met Tower will be secured by screw-in anchors and guy wires that attach to a monopole that rests on a base plate that is less than ten square feet. Potential impacts to grassland habitat surrounding each of the three proposed Met Tower sites will be minimal due to the small size of the Met Tower base plate, the tower's guy wires and anchors, and corresponding instrumentation. Access to each site during construction will be on developed roads; however, the final approach to each of the Met Tower sites will be through upland annual grassland.

Potential project-related impacts to special status bird and bat species could include direct mortality from Met Tower and guy wire collisions. In addition, potential direct impacts could occur to terrestrial and non-flying species from construction vehicles and equipment accessing each of the Met Tower locations. The construction of the Met Towers and guy wires could have a potential direct impact on ground nesting birds and CTS that are aestivating in small mammal burrows. Potential indirect impacts could result from nest abandonment created by excessive noise too close to active bird nests.

However, while bank swallows, golden eagles, Swainson's hawks, and burrowing owls have been documented within and adjacent to the Project area, there is a very low potential for such species to collide with the Met Towers or their guy wires. These species would avoid large structures such as Met Towers and the placement of industry-recognized bird deterring reflectors on each of the Met Towers' guy wires would further diminish the potential for collisions. In addition, bats are adept at avoiding such structures due to their echolocation ability, which allows them to navigate and avoid collisions with structures.

With the appropriate avoidance and minimization measures implemented, the potential impact to biological resources within the three (3) proposed Met Towers locations is expected to be less than significant. The three (3) proposed Met Tower locations are located on annual grassland dominated hilltops and away from riparian corridors. Each Met Tower location does have a low potential to be used as upland/aestivation habitat for CTS and each contains potential habitat for a variety of nesting birds.

For Met Towers less than 200 feet tall, red, flashing lights are not required to be installed on Met Towers. Therefore, given the proposed Met Towers for this Project are less than 200 feet tall, red, flashing lights will not be installed on them and therefore, there will be no impacts to bats and nocturnal avian species from the lighting of the three (3) proposed Met Towers.

There were no special status plants, habitat suitable for VELB, wetlands, streams, or vernal pools identified at the three (3) proposed Met Location sites. Therefore, these resources will not be impacted by Met Tower construction or operation. However, as mentioned above, the three (3) proposed Met Tower locations contain potential upland/aestivation habitat for CTS as well as contain potential habitat for nesting birds. In addition, proposed Met Tower locations MET 2 and MET 3 include trees, which contain potential habitat for nesting raptors. Raptor species that may be observed using the area for nesting and/or foraging include red-tailed hawk (*Buteo jamaicensis*), Swainson's hawk, American kestrel (*Falco sparverius*), golden eagle, burrowing owl, and others.

Impacts to raptors and other birds foraging habitat is considered low due to the minimal ground disturbance. The installation of each Met tower will temporarily remove roughly ten square feet of foraging habitat suitable for raptors and other birds flying in the area. Impacts to flying raptors and birds are generally avoided by siting Met Towers away from suitable nesting habitat as well as the placement of bird diverters on each guy wire for each Met Tower. At the time of each survey, no active or inactive nests were observed. In addition to a pre-construction nesting survey, the use of bird-flight diverters will further increase avoidance from potential avian collisions.

Potential upland/aestivation habitat loss for CTS resulting from the installation of each proposed Met Tower will be completely avoided. Access to each site would be via developed road with short distances of cross-country travel through annual grassland. Each proposed Met Tower location is within one or more stock ponds within 0.25 miles. During certain times of year and during rainy/wet conditions, CTS may be found travelling to and from their upland and breeding habitat and have the potential to be crushed by vehicles. During ground disturbing work, CTS have the potential to be impacted while in their underground burrows. Assuming CTS is present within the stock ponds, a qualified biological monitor should be present during work in potential upland/aestivation areas during work including any ground disturbing work.

CONCLUSION

With the mitigation measures implemented for nesting raptors and migratory birds as well as for avoidance of upland CTS habitat (ground squirrel burrows), impacts to biological resources that will occur from the construction and operation of the three (3) proposed Met Towers will be less than

significant. No special status plants, habitat for VELB, wetlands, streams, or vernal pools occur within the three proposed Met Tower sites.

Avoidance and Minimization of Impacts to Waters of the U.S. and Waters of the State

The proposed Project has been designed to avoid impacts to Waters of the U.S. and Waters of the State. A vegetated swale runs north to south within 100 feet of the proposed Met Tower 3 location and joins an ephemeral drainage that runs east to west and is located downhill of the proposed Met Tower approximately 340 feet to the south; however, construction will take place during the dry season, and therefore drainage will be avoided and will not be impacted by the proposed Met Tower.

Avoid disturbance of special status bird species, nesting raptors, and other migratory birds protected under the MBTA

Trees in close proximity at two of the sites (MET 2 and MET 3) were surveyed for potential raptor nests, including potential Swainson's hawk nests. No active or inactive nests were observed during the time of the survey. In addition to guy wires being placed on each proposed Met Tower, prior to construction it is recommended that Yolo County should implement one of the following measures, depending on the specific construction timeframe, to avoid disturbance to ground, tree, and other nesting special status birds and non-special status migratory birds:

1. If construction activities are scheduled to occur during the nesting season (approximately February 15 through August 31) pre-construction nesting surveys shall be conducted by a qualified biologist.

    - Surveys shall be conducted within the proposed Project area and all potential nesting habitat within approximately 100 feet of this area;

    - The surveys should be conducted within one week before initiation of construction activities at any time between February 15 and August 31. If no active nests are detected, then no additional mitigation is required; or

    - If surveys indicate that migratory bird nests are found in any areas that would be directly affected by construction activities, a no-disturbance buffer shall be established around the site to avoid disturbance or destruction of the nest site until after the breeding season or after a wildlife biologist determines that the young have fledged (typically late June to mid-July). The extent of the buffer will be determined by a qualified wildlife biologist, and the input of CDFW and/or USFWS will depend on the status of the species, the noise or construction disturbance, line of sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. These factors should be analyzed to make an appropriate decision on buffer distances.

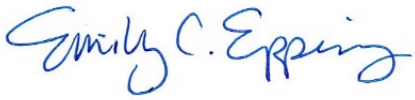
2. If construction activities begin outside the breeding season (approximately September 1 through February 14) then proposed Project activities may proceed until it is determined that an active migratory bird nest would be subject to abandonment as a result of construction activities. Optimally, all necessary vegetation removal shall be conducted before the breeding season so that nesting birds would not be present in the construction area during construction activities. If any bird nests are in the proposed Project area under pre-existing construction conditions, then it is assumed that they are habituated (or will habituate) to the construction activities. Under this scenario, the pre-construction survey described previously should still be conducted on or after February 15 to identify any active nests in the vicinity. Active sites should be monitored periodically until after the breeding season or after the young have fledged (typically late June to mid-July).

Avoid Impacts and/or Disturbance to California Tiger Salamander and Their Habitat

The California tiger salamander, a State and Federally-threatened species, has the potential to occur within proposed Project region with the closest recorded observations approximately two miles from the proposed Met Tower 1 Site location (Figure 1). Each proposed Met Tower location is within one or more stock ponds within 0.25 miles. CTS move to upland locations from their breeding ponds to seek cover in existing small mammal burrows in the late fall and early winter during the onset of rain when they are known to return to breeding ponds (USFWS 2017b). CTS may be found travelling to and from their upland and breeding habitat up to 1.24 miles and have the potential to be crushed by vehicles (CDFW and USFWS 2003). Therefore, the placement of Met Towers and their guy wires could directly impact CTS within upland small mammal burrows. Each Met Tower site will be monitored to ensure that the placement of the Met Tower and its guy wires avoids any existing small mammal burrows in order to avoid impacts to CTS. At each proposed Met Tower Site, it is recommended that a qualified biological monitor be present during installation and no ground disturbance will take place where small mammal burrows occur including areas directly adjacent to small mammal burrows. With these recommended avoidance and mitigation measures, impacts to CTS will be less than significant.

Reference: **Habitat Assessment and Biological Survey Report for Proposed Meteorological Tower Sites Within the Proposed King Flat Study Area, Yolo County, CA**

Stantec Consulting Services Inc.



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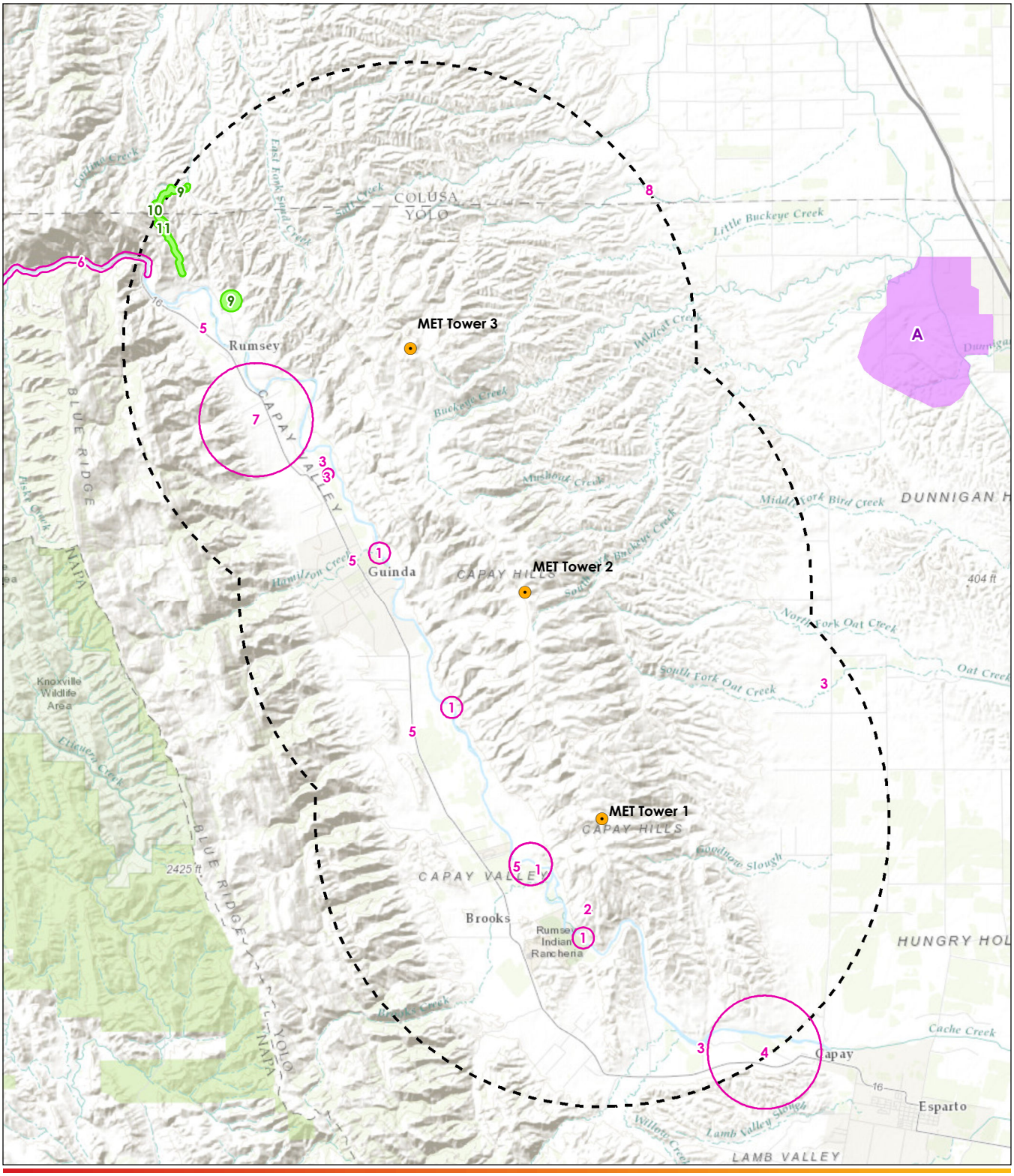
Attachment 1. Figure 1 Project Location and Proposed Met Tower Locations

cc. Erec DeVost, Stantec
Josh Hohn, Stantec
Elan Carnahan, Stantec



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0 1 2 Miles

1:159,920 (at original document size of 8.5x11)

Stantec

Legend

- Proposed MET Tower Locations
- 5 Mile Buffer
- CNDDB Wildlife Occurrences*
- CNDDB Plant Occurrences*
- Critical Habitat**

CNDDB Wildlife Occurrences*

1. bank swallow
2. California tiger salamander
3. Swainson's hawk
4. Townsend's big-eared bat
5. valley elderberry longhorn beetle
6. western pond turtle
7. western red bat
8. western spadefoot

CNDDB Plant Occurrences*

9. adobe-lily
10. bent-flowered fiddleneck
11. Colusa layia

Critical Habitat**

A. California tiger salamander

Figure 1
Project Location and Proposed MET Tower Locations

* California Department of Fish and Wildlife, California Natural Diversity Database (CNDDB) October 2017
** United States Fish and Wildlife Service (USFWS) Critical Habitat Data October 2017

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