# County of Yolo

**PLANNING AND PUBLIC WORKS DEPARTMENT**

*John Bencomo*
DIRECTOR

*292 West Beamer Street*
*Woodland, CA 95695-2598*
*(530) 666-8775 FAX (530) 666-8156*
www.yolocounty.org

**PLANNING COMMISSION STAFF REPORT** **JUNE 9, 2011**

**FILE #2011-006:** Request for a Use Permit to construct and operate a 197-foot tall temporary meteorological tower in the Agricultural Preserve (A-P) zone (Attachment A). The meteorological tower will be anchored with guy wires and collect data to assess the economic viability of a utility-scale wind energy generation project.

**APPLICANT:** Pioneer Green Energy
1802 Lavaca Street, Ste 200
Austin, TX 78701

**OWNER:** Janet Butler
PO Box 38
Robbins, CA 95676

**LOCATION:** 7501 County Road 90, approximately six miles northwest of Zamora, in the Dunnigan Hills (APN: 054-030-001) (Attachment B)

**GENERAL PLAN:** Agriculture

**ZONING:** Agricultural Preserve (A-P)

**FIRE SEVERITY ZONE:** None

**SUPERVISORIAL DISTRICT:** 5 (Supervisor Chamberlain)

**FLOOD ZONE:** X (area outside the 100-year and 500-year floodplains)

**SOILS:** Tehama loam, 0 to 2 percent slopes (Class II); Sehorn-Balcom complex, 2 to 15 percent slopes (Class III); Sehorn-Balcom complex, 15 to 30 percent slopes, eroded (Class IV); Sehorn-Balcom complex, 30 to 50 percent slopes, eroded (VI); Corning gravelly loam, 2 to 15 percent slopes, eroded (Class VI)

**ENVIRONMENTAL DETERMINATION:** Negative Declaration

**REPORT PREPARED BY:**
Jeff Anderson, Associate Planner

**REVIEWED BY:**
David Morrison, Assistant Director

## RECOMMENDED ACTIONS

That the Planning Commission:

1. Hold a public hearing and receive comments;
2. Adopt the Negative Declaration prepared for the project, with the Errata, as the appropriate level of environmental review in accordance with the California Environmental Quality Act (CEQA) and Guidelines (Attachment C);
3. Adopt the proposed Findings (Attachment D); and
4. Approve the Use Permit subject to the Conditions of Approval (Attachment E).

**AGENDA ITEM 6.2**

## REASONS FOR RECOMMENDED ACTIONS

The proposed meteorological tower (Met Tower) will collect wind speed data that can be used with other regional data to characterize the long-term wind resource in the area. The data collected will be used to assess the economic viability of a utility scale wind energy generation project. The proposed project is consistent with policies in the Yolo County 2030 Countywide General Plan and Climate Action Plan that encourage expanded capacity and reliance on renewable energy resources in order to promote greenhouse gas emission reductions and reduce the potentially adverse effects of climate change. Though the Met Tower is not itself a renewable energy source, it is necessary to determine the feasibility of installing a large scale renewable energy (wind) project. The tower is temporary and would be decommissioned and removed from the project site within three years from the date of approval.

## BACKGROUND

The proposed project is a Use Permit to construct a 197-foot tall temporary Met Tower. The Met Tower includes the following components: a three-foot by three-foot base plate; one galvanized steel tower measuring 197-feet in height and between eight and ten inches in diameter; four sets of guy wires (six guy wires per set, for a total of 24 guy wires); six anemometers and two wind vanes; a small box affixed to the tower containing logging/transmitting electronics; and a small solar panel and battery pack affixed to the tower. The Met Tower will be unmanned, and aside from the tower and affixed apparatuses, no other equipment is proposed. The applicant anticipates making only one or two site visits per year for routine maintenance purposes.

The applicant has incorporated the design recommendations of the National Agricultural Aircraft Association in order to increase the tower visibility for passing aircraft. The entire length of the Met Tower will be painted in seven alternating bands of orange and white and will also include eight orange marker balls on the guy wires. The applicant will also install a seven-foot safety sleeve at the anchor point of each guy wire connection. Additionally, the applicant has proposed to install a single red flashing light at the top of the tower to increase tower visibility at for aircraft pilots (the Federal Aviation Administration (FAA) does not require lighting on towers under 200 feet). The light will only be operated during the night and inclement weather.

The applicant has proposed to install bird flight diverters on the guy wires to minimize the impact of bird strikes with the guy wires. Bird flight diverters are a common mitigation practice for overhead power lines and are becoming increasingly common for use on guy wires for communication towers and other guy-wired towers. The bird flight diverters are small coils made from a high-impact, standard PVC. The bird flight diverters will be placed approximately every fifteen feet on the outermost and innermost guy wires of each set, according to industry standards.

## STAFF ANALYSIS

The proposed Met Tower would be located on the southwest portion of a 635-acre parcel, which is part of a larger 3,800± acre ranch property. There is an existing 100-foot tall telecommunication tower and 200-square-foot equipment structure (approved in 1993) approximately 1,200 feet northeast of the proposed Met Tower location. The surrounding properties in all directions are zoned Agricultural Preserve (A-P), and are used primarily as rangeland. There are approximately four home sites within two miles of the proposed tower location. The nearest home site is approximately 1.6 miles northwest of the proposed tower. The nearest cluster of homes is located approximately 3.5 miles east of the proposed tower on County Road 91B.

Under Yolo County Code Section 8-2.2418.3, commercial wind turbines are permitted in the Agricultural Preserve zoning district, provided a Use Permit is first obtained. It is the policy of the Planning and Public Works Department to regard meteorological towers as a use that is accessory to commercial wind turbines and therefore appropriate in any zoning district where commercial wind turbines are conditionally allowed. In order to ensure the towers remain temporary, a Condition of Approval has been added to require the removal of the towers after three years, unless a Use Permit Amendment is approved by the Planning Commission.

Met Tower Regulations

The technology behind wind energy has developed significantly over the last several years. Temporary Met Towers are a rather new phenomenon and State, local, and federal agencies are attempting to regulate them in order to increase the safety of pilots (primarily crop dusters). Unlike cellular towers, which are usually well under 200 feet and are often located near urban areas, or radio towers which are usually above 200 feet and are required to include FAA lighting and marking requirements, Met Towers are typically located in agricultural or open space areas and are not subject to the FAA lighting and marking requirements. Thus, Met Towers are difficult to notice and may pose a hazard to low-flying aircraft if tower marking and lighting are not required.

There is pending state legislation (AB 511, Yamada) that would require certain design criteria to be met prior to local agency approval of Met Towers (Attachment C, Appendix B). This proposed legislation is similar to the recommendations proposed by the National Agricultural Aircraft Association, which the applicant has included in the project proposal. These safety design measures include painting of the tower in alternating bands of orange and white, marker balls attached to the guy wires, fenced anchor points, seven-foot safety sleeves on the guy wires, and a red flashing light at the top of the tower. Additionally, the Federal Aviation Association is also in the process of amending their regulations to include voluntary measures that tower operators can take to make Met Towers more visible to low-flying aircraft. These draft recommendations are similar to those proposed in AB 511 and by the National Agricultural Aircraft Association.

Aesthetics and Safety

Staff recognizes that aesthetic perceptions are subjective and the aesthetic impacts associated with the project may be perceived differently by various individuals. Based on photographs and a site visit to the project site, staff has determined that the tower will be visible from different vantage points. The tower would be visible from segments of Interstate 505 and possibly from Interstate 5, and from various County roads. In addition, the tower would be visible from other vantage points in the nearby vicinity of the project site, including rural residences and agricultural operations. The construction of the Met Tower, as with all types of development, will place a structure where there was not one previously. The overall aesthetic impact is greater for those who view it on a regular basis, such as nearby residents; however, it is necessary to increase the visibility of the tower as much as possible to passing aircraft. Thus, the trade-off is that the marking and lighting requirements will make the tower more visible from the ground, but these requirements will greatly increase the safety of low-flying aircraft.

Biological Resources and Bird Strikes

The setting of the proposed Met Tower location includes annual grassland on rolling hills. The project site does not contain wetlands, streams, vernal pools, or migratory bird or raptor nesting habitat according the survey prepared by Stantec Consulting Services (Attachment C, Appendix D). The proposed project site is located approximately three miles south of federally designated Critical Habitat Area for the California Tiger Salamander, listed as "Threatened" under the federal Endangered Species Act. According to the United States Fish and Wildlife Service (USFWS), there

are six or more known occurrences of the salamander within four miles of the project site. Additionally, USFWS indicates that there may be several potential breeding ponds within one mile of the project site to the south and east. Salamanders are known to aestivate (breed) in burrows 1.25 miles or more from breeding habitat. However, as indicated in the Negative Declaration Errata (Attachment C), Stantec Consulting Services assessed the project site for upland habitat, including the tower and guy wire locations, as well as access to the site, and determined that it does not contain the appropriate habitat for burrow aestivation required by this species.

The project location provides potential foraging habitat for raptors and other birds of prey, and the unique topographical features of the Dunnigan Hills have the potential to attract migrating birds and bats, according to Jim Estep. However, it is unknown as to what extent the foraging may be. The applicant has incorporated project designs recommended by the USFWS to minimize bird collisions, including installation of bird flight diverters and low-intensity red flashing light. In addition, the applicant will be required to address the potential loss of Swainson's hawk habitat through participation in the Draft Yolo County Habitat Conservation Plan.

Raptors are less susceptible to blind collision with towers and guy wires due to their exceptional eyesight and maneuverability. Collisions are possible during daytime inclement weather; however, raptors tend not to fly during rainy or low visibility conditions (Attachment C). The bird flight diverters will further reduce the risk of bird strikes with the tower and guy wires. Bird flight diverters will be placed on the outermost and innermost guy wires on each of the four sets. Although effective for minimizing bird strikes, bird flight diverters are not easily seen by people at any significant distance.

Most night-migrating birds fly at heights well above 197-feet and would not likely be affected by the tower. However, some birds are thought to be attracted to artificial light sources, such as flashing tower lights. Research suggests that light flash duration, rather than color, may be a more critical factor reducing bird collisions. Therefore, the longer the off-phase between the flashes, the less likely the birds will be attracted to the lighting (Attachment C). The applicant has proposed to use a red flashing light and a Condition of Approval has been included to ensure that the light operates with the longest allowable off-phase.

At the recommendation of Maria Wong, Habitat JPA Manager, and the USFWS, staff has included a Condition of Approval to require a monitoring program to document the presence of any avian carcasses near the base of the Met Tower to determine if any bird strikes with the guy wires have occurred. The applicant shall submit a Biological Monitoring Program to the Planning and Public Works Department for approval prior to the issuance of any building or grading permits. The Program shall include quarterly (every three months) monitoring of the project site for three years (or the life of the project) by a qualified biologist hired by the applicant. A report shall be prepared by the consultant documenting the results of the monitoring and shall be submitted to the Planning and Public Works Department and the appropriate office of the U.S. Fish and Wildlife Service, following each quarterly monitoring session.

As discussed above, the project as proposed is consistent with the most recent federal and state legislation proposed for ensuring the safety of navigable airspace. The project includes maximum design criteria for aviation marking, as well as for minimizing collision risk to diurnal species.

## AGENCY COMMENTS

A Request for Comments was prepared and circulated for the proposed project from February 9, 2011 to February 25, 2011. The Initial Study/Negative Declaration was circulated for public review from May 10, 2011, to June 8, 2011. The project was also reviewed by the Development Review Committee on February 23, 2011 and May 25, 2011. Additionally, a courtesy notice was sent to property owners within 300 feet of the project site. The Yolo-Zamora Citizens Advisory Committee recommended approval of the project to the Planning Commission at their May 23, 2011 meeting on a 4-2 vote. At the time of preparation of this report, staff has not received any comments from nearby property owners or other interested parties in opposition to the proposed project. Comments received during the review period from interested agencies are displayed below and have been incorporated into the project as appropriate.

| Date | Agency | Comment | Response |
|---|---|---|---|
| February 10, 2011 | Yolo County Building Division | Project will be required to provide structural calculations for meeting wind and seismic design standards in accordance with all applicable Uniform Building Codes and Yolo County Code requirements. | Included in Conditions of Approval. |
| February 11, 2011 | Yolo County Agricultural Commissioner | Incorporate marking recommendations from the National Agricultural Aircraft Association. | Included in Conditions of Approval. |
| February 18, 2011 | California Agricultural Aircraft Association | Incorporate marking recommendations from the National Agricultural Aircraft Association. | Included in Conditions of Approval. |
| May 11, 2011 | Yocha Dehe Wintun Nation | Provide notification in the event that cultural resources are discovered. | Comment noted. |

| | | | |
|---|---|---|---|
| May 12, 2011 | U.S. Fish and Wildlife Service (USFWS), Sacramento Branch | Suggest that the applicant review the *Interim Guidance on Site Assessments and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander*.<br><br>Based on aerial photographs it appears that there are several potential breeding ponds within 1 mile of the project site to the south and east. Additionally, there are 6 or more known occurrences of the salamander within 4 miles of the project site, as well as designated critical habitat approximately 3 miles to the north. | Comment noted. Stantec Consulting Services assessed the project site for upland habitat, and determined that it does not contain the appropriate habitat for burrow aestivation required by this species. Staff confirmed this with USFWS via telephone on 5/24/11. See IS/ND Errata (Attachment C). |
| May 13, 2011 | California Department of Transportation, Division of Aeronautics | No comment. The 197-foot tower does not exceed the 200 feet in height criteria for notifying the Federal Aviation Administration. Additionally, the towers are not within two miles of a public-use airport or a military airfield. | Comment noted. |
| April 11, 2011 | Maria Wong, Habitat JPA Manager | Request species surveys for VELB, Swainson's hawk, burrowing owl, White-tailed kite, and rare plants.<br><br>Recommends a monitoring program for bird fatalities. | Site survey has been completed, and is included in Attachment C.<br><br>Included in Conditions of Approval. |

| | | | |
|---|---|---|---|
| April 15, 2011 | Yolo County Public Works Division | SWPPP is required if construction disturbance is over one acre.<br><br>Transportation permit is required if vehicles/loads exceed statutory limitations on the size, weight, and loading of vehicles contained in Division 15 of the California Vehicle Code. | Included in Conditions of Approval.<br><br>Comment noted. |
| June 1, 2011 | Mary Jo Hoes, private citizen | Recommends that the County require the applicant to collect noise data to determine a baseline for future wind turbines. | Comment noted. |
| June 1, 2011 | USFWS | Recommends placement criteria for towers and the use of bird flight diverters. Also recommends a monitoring program for bird fatalities. | Comments Included in Conditions of Approval. With the exception of the monitoring recommendation, the project already contained design standards to reduce impacts to birds, to the greatest extent possible. |

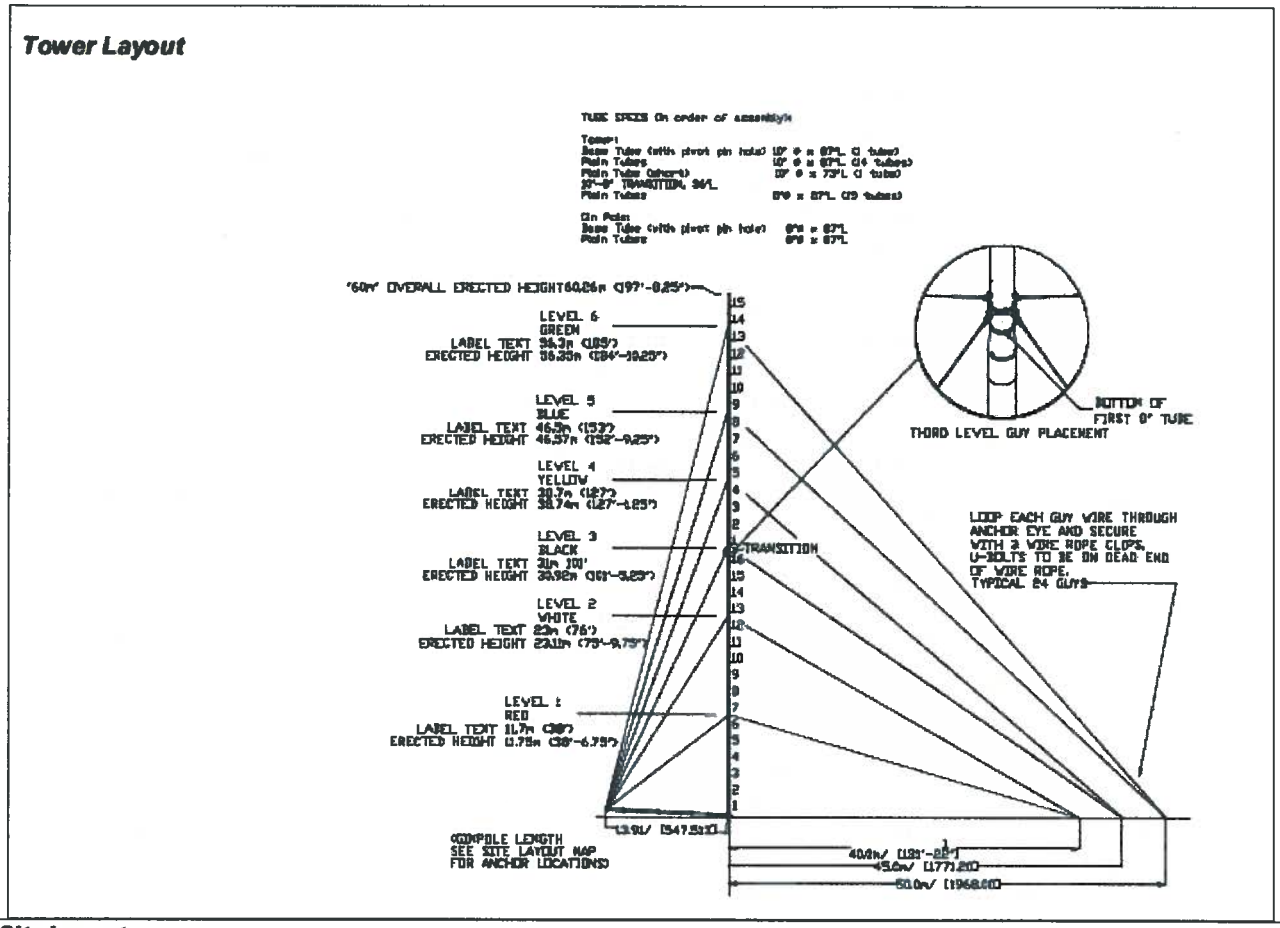
## APPEALS

Any person who is dissatisfied with the decisions of this Planning Commission may appeal to the Board of Supervisors by filing with the Clerk of the Board of Supervisors within **fifteen (15) days** from the date of the action. A written notice of appeal specifying the grounds for appeal and an appeal fee immediately payable to the Clerk of the Board must be submitted at the time of filing. The Board of Supervisors may sustain, modify, or overrule this decision.

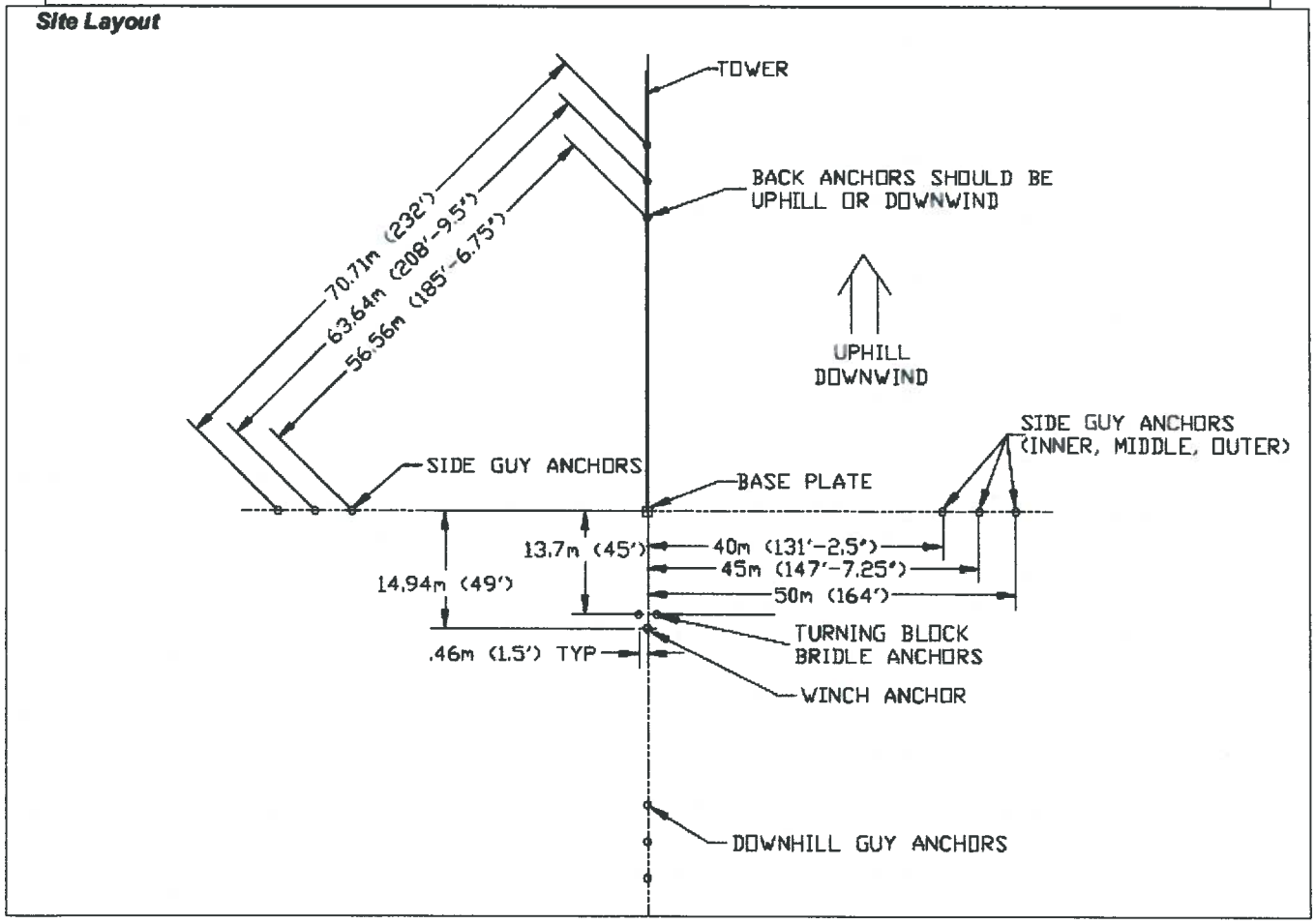
## ATTACHMENTS

**A:** Site plan
**B:** Location map
**C:** Negative Declaration and Errata
**D:** Findings
**E:** Conditions of Approval

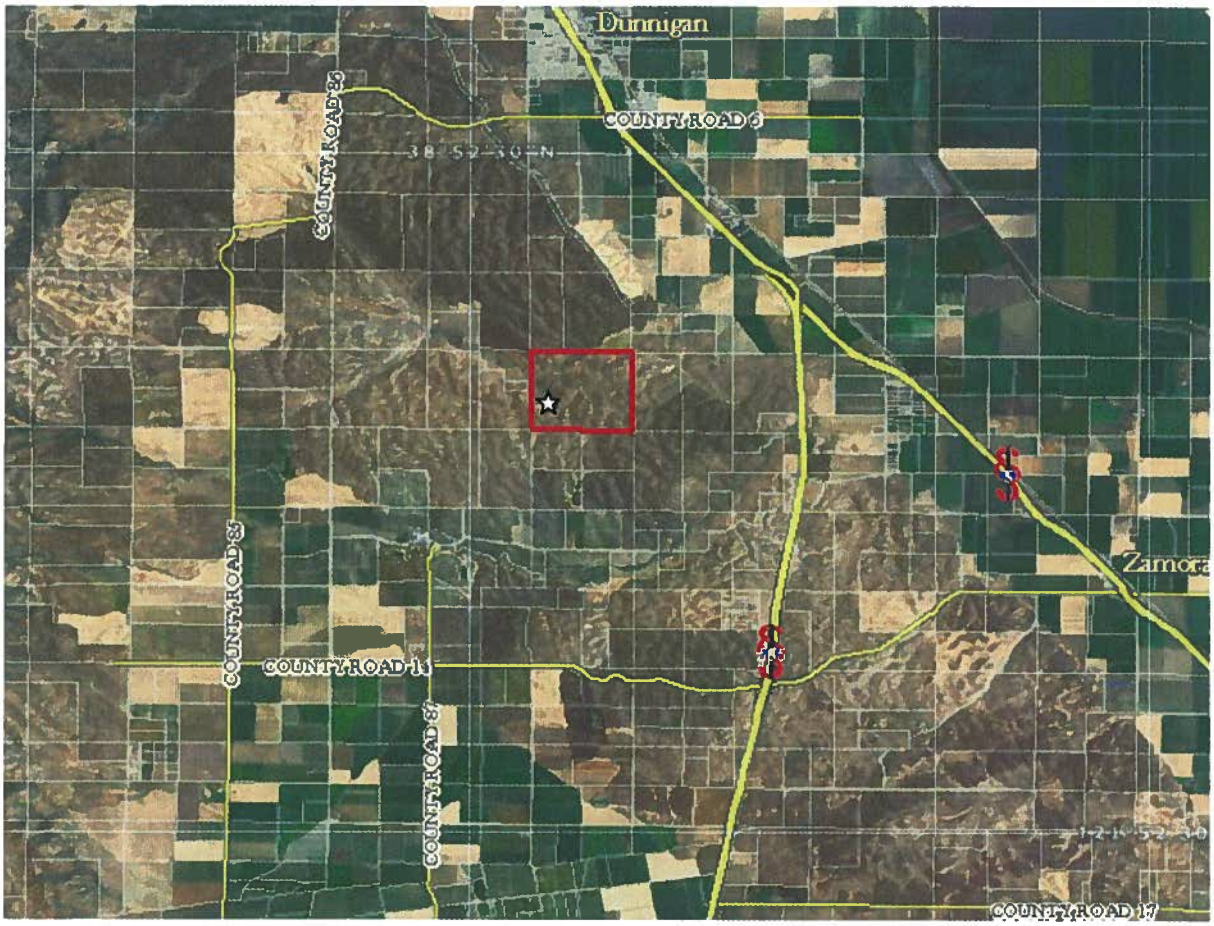
## Tower Layout




## Site Layout




# ATTACHMENT A




# ATTACHMENT B

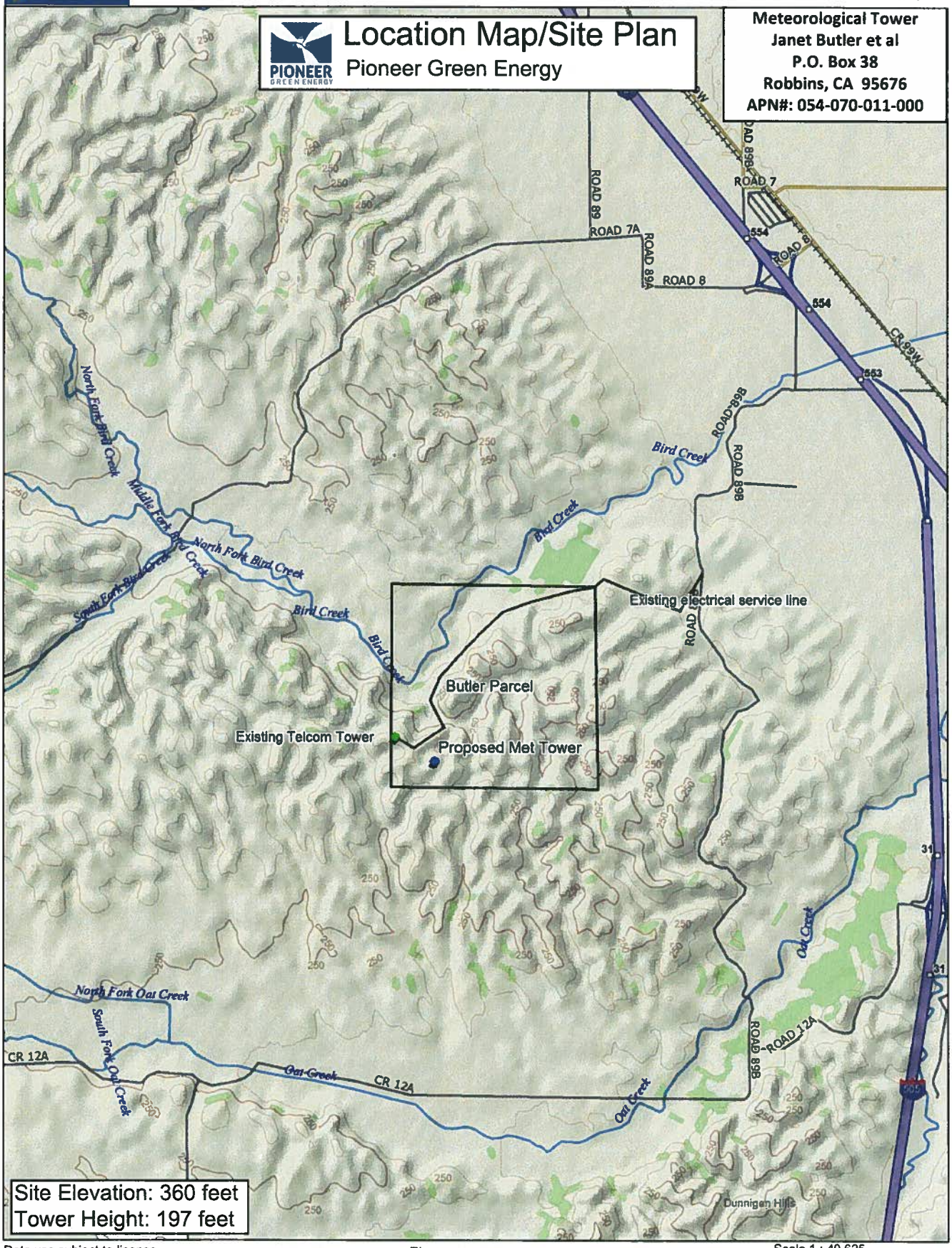
DELORME

XMap® 7

# Location Map/Site Plan

Pioneer Green Energy

**Meteorological Tower**
**Janet Butler et al**
**P.O. Box 38**
**Robbins, CA 95676**
**APN#: 054-070-011-000**




Site Elevation: 360 feet
Tower Height: 197 feet



TN
MN (14.4°E)

Scale 1 : 40,625
1" = 3,385.4 ft
Data Zoom 12-3

**Errata for**
**Pioneer Green Energy Meteorological Tower Use Permit (ZF #2011-006)**
**Initial Study/Negative Declaration**

The Initial Study/Negative Declaration is amended at the following pages to incorporate the following changes to the text.

The following changes to the Initial Study/Mitigated Negative Declaration are outlined in bold **underline** or ~~**strikethrough**~~.

Page 15 – Biological Resources

Add the following changes to "Environmental Setting":

## Environmental Setting

The applicant commissioned Stantec Consulting Services to conduct a reconnaissance-level biological survey of the proposed Met Tower location (Appendix D). A thorough survey was completed to identify habitats within the Met Tower project location and along proposed access to the site. The topography of the project location consists of annual grassland and rolling hills. The habitat consists of non-native grasses and forbs including non-native wild oat (Avena spp.), ripgut brome (Bromus diandrus), soft chess (Bromus hordeacus), and barleys (Hordeum spp.). No sensitive habitat including vernal pools, streams or wetlands, or trees were located within the vicinity of the proposed Met Tower location. No elderberry shrubs or trees were located in the proposed project area. **Additionally, the survey concluded that upland habitat does not exist for the California Tiger Salamander, and the site does not contain appropriate habitat for burrow aestivation required by this species.** The survey also concluded that the Met Tower location did not contain nesting habitat for Swainson's hawk, burrowing owl, white-tailed kite, or any other raptor or migratory bird nesting habitat.

Page 16 – Biological Resources

Add the following changes to the "Discussions of Impacts" for IV(a):

a) *Less Than Significant Impact.* The project location does not include vernal pools, streams, wetlands, or any trees. Therefore it is unlikely the proposed project would have any impact on candidate, sensitive, or special status plants, crustaceans, insects, amphibians, reptiles, or fish species. **Biologists from Stantec Consulting evaluated the Met Tower site for the potential presence of California Tiger Salamander (CTS) habitat during the field survey. The CTS is listed as "threatened" under the federal Endangered Species Act. Due to the presence of stock ponds within one mile of the proposed Met Tower site, which could contain potential breeding habitat for the species, upland habitat within the Met Tower site was evaluated as potential upland habitat for the CTS. Upland habitat was assessed in the Met Tower site, including the tower and guy wire locations, as well as access to the site and it was determined that it does not contain appropriate habitat for burrow aestivation required by this species. Stantec**

# ATTACHMENT C

**concluded that upland habitat does not exist for this species since the site contains minimal usage by small mammals and it does not contain small mammal burrows that could be used by the species. The potential impact to the upland annual grassland in the project area will be minimal due to the small size of the Met Tower foundation and guy wire foundations. The Met Tower foundation will be less than 25 square-feet and the guy wire foundations will also be less than 25 square-feet. Access to the site during construction is mostly on developed roads; however the final approval to the Met Tower site will be through the upland annual grassland. Since it was determined by Stantec that the access area and Met Tower areas do not contain upland habitat for the CTS, and no small burrows will be impacted during construction, the installation of the Met Tower and associated guy wires is not anticipated to have an impact on the CTS.**

Therefore, the only potential impact the proposed Met Tower would have on candidate, sensitive, or special status species would be on birds. As mentioned above, there are no trees or burrows near the project location, so it is unlikely any nesting habitat exists. There is however, the potential for bird collisions with the tower and guy wires. The California Natural Diversity Database search results, provided by the applicant, determined that there were no documented occurrences of special status species within one-mile of the proposed Met Tower location (Appendix E). The California Natural Diversity Data Base (CNDDB) 7 ½ Minute Quad Map (Zamora 530C) showed that there is potential for Swainson's hawk, mountain plover, and burrowing owl in the Dunnigan Hills area, but not necessarily on the project site. The list below displays the birds on the CNDDB 7 ½ Minute Quad Map:

| ***Common Name*** | ***Federal Status*** | ***California Status*** | ***DFG Status*** |
|---|---|---|---|
| Swainson's hawk | None | Threatened | None |
| mountain plover | Proposed Threatened | None | Species of Special Concern |
| burrowing owl | None | None | Species of Special Concern |

The following discussion is excerpted from a study completed by Jim Estep in 2010 on the biological impacts of a proposed 365-foot guy-wired radio tower (ZF #2009-001) in Yolo County, and is applicable to similar communication and meteorological towers:

> *It is important to understand that any analysis of avian mortality issues with respect to a specific project is necessarily limited by scientific uncertainty on a number of important points. For example, in the absence of long-term project-specific research on avian movements and collision susceptibility, there is no credible scientific basis for estimating the incidence of bird collisions in connection with a proposed communications tower or similar project. Science simply cannot forecast how often bird strikes may occur. In addition, while there are numerous reported bird collision incidents at communication towers, particularly of nocturnal migrants (Kerlinger 2000), there any no studies that demonstrate a clear relationship between bird collisions with communication towers and population declines. As a result, unless the project lies within a particularly important bird flight corridor or in association with habitats that support large bird populations, there is no credible scientific basis for the notion that a particular facility may contribute to a measurable population decline over time, particularly if the recommended safeguards (e.g., flight diverters and lighting) are incorporated into the project design.*

The unique topographical features of the Dunnigan Hills have the potential to attract migrating birds; however, it is unknown as to what extent this may be. The applicant has incorporated project designs recommended by the USFWS (as discussed in (d) below) to

minimize bird collisions. Additionally, as a Condition of Approval, the applicant will be required to participate in the interim Yolo County Habitat Conservation Plan pursuant to the Memorandum of Agreement between the Joint Powers Agency (dated August 7, 2002) entered into by and between the California Department of Fish and Game and the Yolo County HCP/NCCP Joint Powers Agency for Swainson's hawk habitat mitigation. The area subject to the agreement is expected to be approximately 1.25 acres, or as determined by the Joint Powers Agency or California Department of Fish and Game.

Appendix D – Stantec Biological Survey

Add the following changes to "Appendix D- Stantec Biological Survey":

**The applicant has submitted a revised biological survey from Stantec Consulting Group to include discussion on California Tiger Salamander habitat, dated MAY 2011.**

**Pioneer Green Energy**
**Biological Survey Report for a Meteorological Tower Site in Yolo County, CA**

Prepared for:
Pioneer Green Energy, LLC
1802, Suite 200
Austin, TX 78701

Prepared by:
Stantec Consulting Inc.
8735 Atherton Road
Rocklin, CA 95765
916-773-8100

**May 2011**

## Introduction

Pioneer Green Energy, LLC (Pioneer) is evaluating a potential Meterological Tower (Met Tower) sites within their Dunnigan Area of interest for wind energy development within western Yolo County, CA (see attached Figure showing location of eastern most Met Tower). As part of the CEQA compliance process to cover the installation of proposed Met towers, Yolo County, the lead agency for CEQA, has requested that reconnaissance-level biological field surveys be conducted. This report outlines the results of that biological survey.

## REGULATORY OVERVIEW

### Federal Endangered Species Act (ESA)

The US Fish and Wildlife Service (USFWS) has jurisdiction over species listed as threatened or endangered under Section 9 of the ESA. The act protects listed species from harm or *take* which is broadly defined as "...the action of harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct." For any project involving a federal agency in which a listed species could be affected, the federal agency must consult with the USFWS in accordance with Section 7 of the ESA. The USFWS issues a biological opinion and, if the project does not jeopardize the continued existence of the listed species, issues an incidental-take permit.

### Migratory Bird Treaty Act and Bald and Gold Eagle Protection Act

The Migratory Bird Treaty Act (MBTA, 16 United States Code Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668) protect certain species of birds from direct take. The MBTA protects migrant bird species from take through setting hunting limits and seasons and protecting occupied nests and eggs. The Bald and Gold Eagle Protection act prohibits the take or commerce of any part of these species. The USFWS administers both Acts and reviews federal agency actions that may affect species protected by the Acts.

### Section 404 of the Federal Clean Water Act (CWA)

The United States Army Corps of Engineers (Corps) and the Environmental Protection Agency (EPA) regulate the discharge of dredge or fill material into waters of the United States under Section 404 of the CWA ("waters of the United States" include wetlands and lakes, rivers, streams, and their tributaries). Wetlands are defined for regulatory purposes as areas "...inundated or saturated by surface or ground water 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" (333

CFR 328.3, 40 CFR 230.3). Project proponents must obtain a permit from the Corps for all discharges of fill material into waters of the United States, including wetlands, before proceeding with a proposed action.

**State Regulations**

**California Endangered Species Act**

The California Department of Fish and Game (CDFG) has jurisdiction over species listed as threatened or endangered under section 2080 of the California Fish and Game Code. The California Endangered Species Act (CESA) prohibits take of state-listed threatened and endangered species. The state Act differs from the federal Act in that it does not include habitat destruction in its definition of *take*. The California Fish and Game Code defines take as "hunt, pursue, catch, capture, or kill, or attempt to hunt pursue, catch, capture, or kill." The CDFG may authorize take under the CESA through Sections 2081 agreements. If the results of a biological survey indicate that a state-listed species would be affected by the project, the CDFG would issue an Agreement under Section 2081 of the CDFG Code and would establish a Memorandum of Understanding for the protection of state-listed species.

CDFG maintains lists for Candidate-Endangered Species and Candidate-Threatened Species/ California candidate species are afforded the same level of protection as listed species. California also designates Species of Special Concern, which are species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational 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.

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

Sections 3503, 3503.5, and 3800 of the California Department of Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs. Implementation of the take provisions requires that project-related disturbance at active nesting territories be reduced or eliminated during critical phases of the nesting cycle (March 1 – August 15). 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 the birds depend is considered "taking" and is potentially punishable by fines and/or imprisonment. Such taking would also violate federal law protecting migratory birds (e.g. Migratory Bird Treaty Act above).

**Natural Communities Conservation Act**

The Natural Communities Conservation Act of 1991 was intended to provide an alternative and/or a collaborative approach to FESA and CESA. It was designed to

represent a new approach to conservation. Instead of focusing on individual species (e.g., FESA/CESA), the NCCA focuses on protecting intact ecosystems across an entire region or landscape. NCCPs have become increasingly common in the development of regional plans that combine the HCP and NCCP processes.

## Local Regulations and Programs

### Yolo County General Plan

Goals Policies and Implementation Programs in Conservation and Open Space Element that would pertain to the installation of the Met Towers.

**Policy CO-2.9** Protect riparian areas to maintain and balance wildlife values.

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

**Policy CO-2.14** Ensure no net loss of oak woodlands, alkali sinks, rare soils, vernal pools or geological substrates that support rare endemic species, with the following exception. The limited loss of blue oak woodland and grasslands may be acceptable, where the fragmentation of large forests exceeding 10 acres is avoided, and where losses are mitigated.

**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.

### Habitat Conservation Plan/Natural Communities Conservation Plan

The 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 threatened Swainson's hawk.

**Study Methods**

Prior to conducting reconnaissance-level biological resource survey of the proposed Met Tower location in Yolo County, Stantec Consulting Inc (Stantec) conducted a desktop analysis of the area to evaluate the potential for special-status species to occur within the proposed site and access to the site. Sensitive and protected habitats such as vernal pools, streams, and wetlands were assessed, as well as special-status plants and trees for potential raptor nesting.

On May 4, 2011, Stantec biologist Amy Croft conducted a reconnaissance-level biological survey of the proposed Met Tower location. A thorough survey was completed to identify habitats within the Met Tower location and along proposed access to the site. Each habitat was examined and photos were taken in each direction from the proposed Met Tower location.

**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. Little Blue Ridge is the northwestern corner of the County (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).

The setting of the proposed Met Tower location includes an annual grassland on rolling hills (see photos below).

Non-native grasses and forbs dominate these areas and include non-native wild oat (*Avena* spp.), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeacus*), barleys (*Hordeum* spp.) and nonnative forbs.

## Survey Results

### Met Tower - Eastern Location on Attached Figure

The topography of the eastern met tower consisted of annual grassland and rolling hills. The habitat consisted of non-native grasses and forbs including non-native wild oat (*Avena* spp.), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeacus*), barleys (*Hordeum* spp.) and nonnative forbs. No sensitive habitat including vernal pools, streams or wetlands, or trees were located within the vicinity of the proposed Met Tower location. No burrows were identified (habitat for burrowing owls) during the survey.

Photos from the proposed Met Tower location are included below.

Photo 1: Looking East from Eastern Parcel

Photo 2: Looking North from Eastern Parcel

Photo 3: Looking South from Eastern Parcel

Photo 4: Looking West from Eastern Parcel

**Potential Impacts**

The proposed Met Tower may include lighting that will be required by Yolo County. If the Met Tower does contain the required lighting by Yolo County, the proposed Met Tower would include a top-mounted, upward facing, medium intensity flashing red light. Potential biological impacts from the addition of this light on the Met Tower could include attracting nocturnal avian species, such as owls, and bats near the lights. However, attraction of these nocturnal flying avian and bat species would not pose an impact to those species by itself, but an impact could occur if one of these nocturnal species were to either collide with the Met Tower and/or collide with an associated wind sensor mounted on the Met Tower.

The probability of a bat or nocturnal avian species colliding with the Met Tower in any way is considered very low. The Met Tower will not have any large moving parts that could harm any nocturnal bat or avian species and the wind sensors to be mounted on the Met Tower are very small. Bats use echolocation to avoid structures and fly normally while pursuing prey and moving to and from roosting sites. Nocturnal avian species that could be attracted to the lights, such as owls, would have an easy time avoiding wind sensors and the structures themselves. However, the likelihood of an owl being attracted to an upward facing, flashing red light is very low to nil. Therefore, the potential impact from lighting on this Met Tower, if required by Yolo County, in relation to potential impacts to bats and avian nocturnal species is considered very low and no impact to these species are likely to occur.

There were no wetlands, streams, vernal pools, or migratory bird or raptor nesting habitat in the area so these resources will not be impacted by the proposed project. The Met Tower location did not contain nesting habitat for Swainson's hawk, burrowing owl, or white-tailed kite. No elderberry shrubs or trees were located in the proposed project area so there is no potential habitat for the valley elderberry longhorn beetle (VELB) in the proposed project area and thus this species would not be impacted by the project.

California tiger salamanders (CA tiger salamander) have been identified over 2 miles away from the proposed Met Tower location (CDFG 2011). Biologists from Stantec evaluated the Met Tower site for the potential presence of CA tiger salamander habitat during the field survey. Due to the presence of stock ponds within 1 mile of the proposed Met Tower site, which could contain potential breeding habitat for the species, upland habitat within the Met Tower site was evaluated as potential upland habitat for the CA tiger salamander. Upland habitat was assessed within and adjacent to the proposed Met Tower site, including the tower and guy wire locations, as well as access to the site. The areas surveyed for CA tiger salamander upland habitat does not contain the appropriate habitat for burrow aestivation required by this species. Upland habitat does not exist for this species since the area appears to be minimally used by small

mammals and it does not contain small mammal burrows that could be used by the species.

The potential impact to the upland annual grassland in the project area will be minimal due to the small size of the Met Tower foundation and guy wire foundations. The Met Tower foundation will be less than 25 square feet and the guy wire foundations will also be less than 25 square feet. Access to the site during construction is mostly on developed roads; however, the final approach to the Met Tower site will be through the upland annual grassland. Since the access area and Met Tower areas do not contain upland habitat for the CA tiger salamander and no small burrows will be impacted during construction, the installation of the Met Tower and associated guy wires will not impact the CA tiger salamander.

**Conclusions**

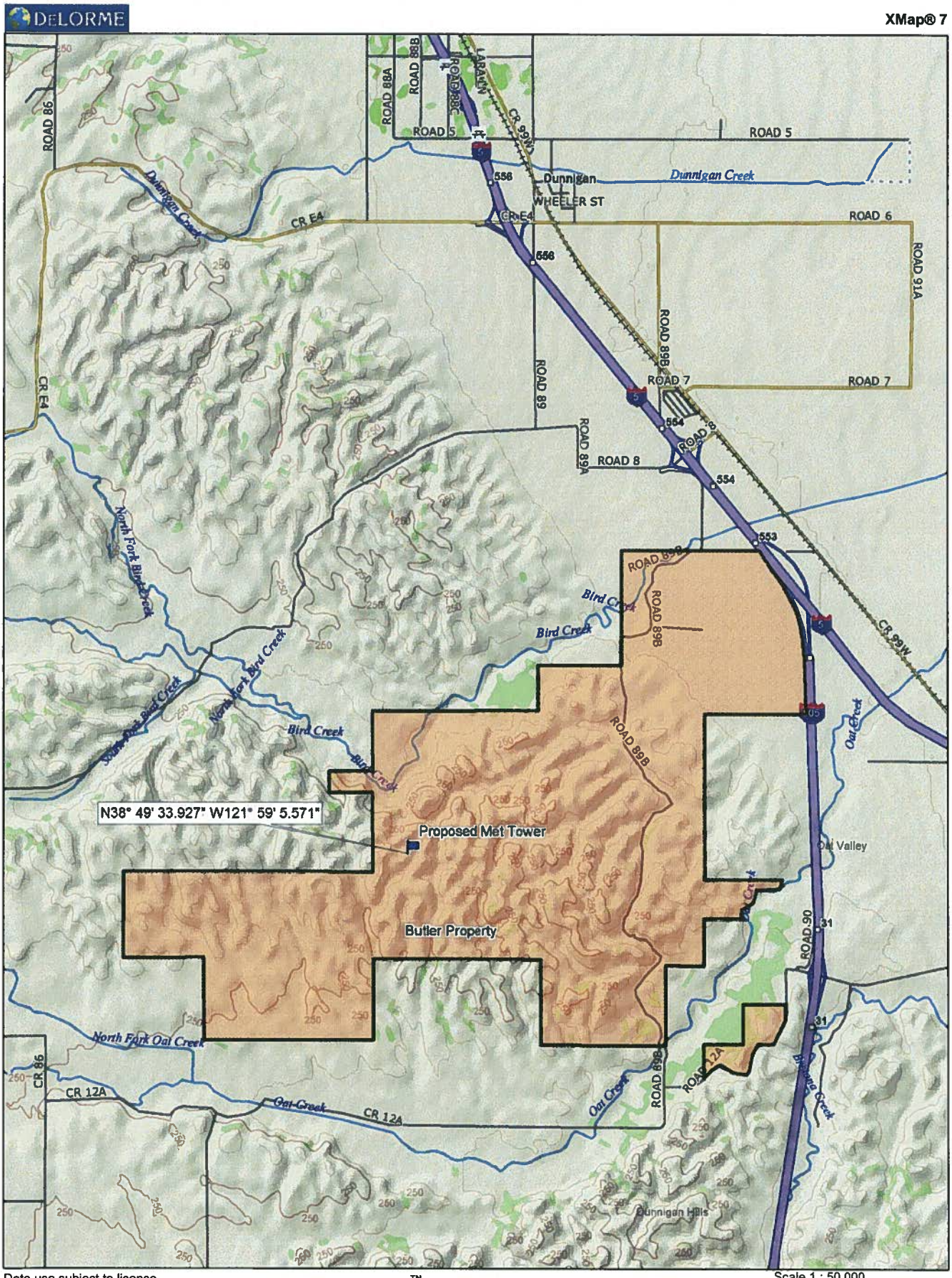
There are no significant biological impacts that will occur from the construction and operation of the proposed Met Tower. No sensitive habitat including vernal pools, burrows, wetlands or streams, small mammal burrows, or trees are within close proximity to the Met Tower location.

## References

California Department of Fish and Game (CDFG). 2011. California Natural Diversity Database (CNDDB), Wildlife and Habitat Data Analysis Branch, Rarefind Version 3.1.1. Updated 4/1/2011.

California Native Plant Society (CNPS). 2011. Inventory of Rare and Endangered Plants (Online). California Native Plant Society, Sacramento, CA. Accessed April 25, 2011 at http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi

County of Yolo. 2009. Yolo County 2030 Countywide General Plan. http://www.yolocounty.org/Index.aspx?page=1965


DELORME
XMap® 7
ROAD 86
ROAD 88A
ROAD 88B
ROAD 88C
LARAMIE
CR 99W
ROAD 5
556
Dunnigan
WHEELER ST
Dunnigan Creek
CR E4
ROAD 6
ROAD 91A
ROAD 89B
ROAD 7
554
ROAD 89
ROAD 89A
ROAD 8
553
North Fork Bird Creek
Bird Creek
CR 99W
Oat Creek
N38° 49' 33.927" W121° 59' 5.571"
Proposed Met Tower
Oat Valley
Butler Property
ROAD 90
31
North Fork Oat Creek
CR 86
CR 12A
Oat Creek
ROAD 12A
Dunnigan Hills
Data use subject to license.
© DeLorme. XMap® 7.
www.delorme.com
TN
MN (14.4°E)
Scale 1 : 50,000
1" = 4,166.7 ft
Data Zoom 12-0

# YOLO COUNTY
# PLANNING AND PUBLIC WORKS DEPARTMENT

## INITIAL STUDY / NEGATIVE DECLARATION

## ZONE FILE # 2011-006

## PIONEER GREEN ENERGY
## TEMPORARY METEOROLOGICAL TOWER
## USE PERMIT

MAY 10, 2011

# Initial Environmental Study

1. **Project Title:** Zone File No. 2011-006, Pioneer Green Energy Meteorological Tower Use Permit

2. **Lead Agency Name and Address:**
   Yolo County Planning and Public Works Department
   292 West Beamer Street
   Woodland, CA 95695

3. **Contact Person, Phone Number, E-Mail:**
   Jeff Anderson, Associate Planner
   (530) 666-8036
   jeff.anderson@yolocounty.org

4. **Project Location:** 7501 County Road 90, approximately six miles northwest of Zamora in the Dunnigan Hills (APN: 054-030-001), see Figure 1 (Vicinity Map) and Figure 2 (Aerial Map).

5. **Project Sponsor's Name and Address:**
   Pioneer Green Energy (Greg Buis)
   1802 Lavaca Street, Ste. 200
   Austin, TX 78701

6. **Land Owner's Name and Address:**
   Janet Butler et al.
   PO Box 38
   Robbins, CA 95676

7. **General Plan Designation(s):** Agriculture

8. **Zoning:** Agricultural Preserve (A-P)

9. **Description of the Project:** See attached "Project Description" on the following pages for details

10. **Surrounding Land Uses and Setting:**

| Relation to Project | Land Use | Zoning | General Plan Designation |
|---|---|---|---|
| Project Site | Agricultural (range land) | Agricultural Preserve (A-P) | Agriculture |
| North | Agricultural (range land) | Agricultural Preserve (A-P) | Agriculture |
| South | Agricultural (range land) | Agricultural Preserve (A-P) | Agriculture |
| East | Agricultural (range land) | Agricultural Preserve (A-P) | Agriculture |
| West | Agricultural (range land) | Agricultural Preserve (A-P) | Agriculture |

11. **Other public agencies whose approval is required:** Yolo County Building Division, Yolo County Environmental Health Division.

12. **Other Project Assumptions:** The Initial Study assumes compliance with all applicable State, Federal, and local codes and regulations including, but not limited to, County of

Yolo Improvement Standards, the California Building Code, the State Health and Safety Code, and the State Public Resources Code.

## Project Description

Project Under CEQA

This Environmental Initial Study is prepared in accordance with the California Environmental Quality Act (CEQA). The term "project" is defined by CEQA as the whole of an action that has the potential, directly or ultimately, to result in a physical change to the environment (CEQA Guidelines Section 15378). This includes all phases of a project that are reasonably foreseeable, and all related projects that are directly linked to the project. The "project" which is the subject of this Environmental Initial Study involves a Use Permit to construct a 197-foot temporary meteorological tower (Met Tower).

Use Permit Proposal

The proposed project is a Use Permit to construct a 197-foot tall temporary Met Tower. The Met Tower will collect data (including wind speed, direction, gusts, temperature, density, and sheer) that can be used with data from a regional reference station to characterize the long-term wind resource. The data collected will be used by the project applicant to assess the economic viability of a utility-scale wind energy generation project. The tower is temporary and will be decommissioned and removed from the project site within three years of issuance of final building permit, or as determined by the Planning Commission.

The Met Tower includes the following components: a three-foot by three-foot base plate; one galvanized steel tower measuring 197-feet in height and between eight and ten inches in diameter; four sets of guy wires (six guy wires per set, for a total of 24 guy wires); six anemometers and two wind vanes; a small box affixed to the tower containing logging/transmitting electronics; and a small solar panel and battery pack affixed to the tower.

The entire length of the Met Tower will be painted in seven alternating bands of orange and white in order to increase the visibility of the structure and guy wires to aircraft pilots. The applicant also proposes to install a total of eight orange marker balls on the guy wires as follows: four marker balls will be attached to guy wires at the top of the tower at a distance no further down than 15 feet from the top wire connection and four marker balls will be installed at the bottom of the guy wires at a height of five to ten feet above the tallest crop to be grown in the immediate vicinity of the tower. The applicant will also install a seven-foot safety sleeve at the anchor point of each guy wire connection. Additionally, the applicant has voluntarily proposed to install a single red flashing light at the top of the tower to increase tower conspicuity at for aircraft pilots (the Federal Aviation Administration (FAA) does not require lighting on towers under 200 feet). The light will only be operated during the night and during inclement weather.

The applicant has proposed to install bird flight diverters on the guy wires to minimize the impact of bird strikes with the guy wires. Bird flight diverters are a common mitigation practice for overhead power lines and are becoming increasingly common for use on guy wires for

communication towers and other guy-wired towers. The bird flight diverters are small coils made from a high-impact, standard PVC and are UV stabilized.

Project Site and Surrounding Location

The proposed Met Tower would be located on the southwest portion of 635-acre Agricultural Preserve (A-P) zoned parcel (APN: 054-030-001). This site is part of a larger 3,800± acre ranch property, currently used as range land. There is an existing 100-foot tall telecommunication tower and 200-square-foot equipment structure (approved in 1993; ZF #4089) approximately 1,200 feet north east of the proposed Met Tower location. There are no other structures on the subject property.

The project site is surrounded by agricultural uses (predominately range land). There are approximately four home sites within two miles of the proposed tower location. The nearest home site is approximately 1.6 miles northwest of the proposed tower. The nearest cluster of homes is approximately 3.5 miles east of the proposed tower on County Road 91B.

United States Fish and Wildlife Service Guidelines

The United States Fish and Wildlife Service (USFWS) produced a list of suggested guidelines to minimize bird strikes with communication towers (Appendix A). Although the proposed Met Tower does not meet the USFWS definition of a "communication tower" (radio, television, cellular, and microwave), it is substantially similar to such towers. The proposed project demonstrates compliance with all of the tower design recommendations for minimizing bird strikes, including installation of bird flight diverters and flashing red light (as opposed to a steady burning light). In addition, the tower will not be constructed in an area where there is a significant concentration of breeding, feeding, or roosting birds.

Proposed "Met Tower" Legislation

The technology behind wind energy has developed significantly over the last several years. Temporary Met towers are a rather new phenomenon and state and federal agencies are attempting to regulate them in order to increase the safety of pilots (primarily crop dusters). As discussed above, Met Towers collect data in order to determine the feasibility for future wind energy projects. Met Tower approvals rest solely with local agencies, or the jurisdiction in which a project is located. In this particular case, the applicant is required to obtain a Use Permit from the county. However, there is pending state legislation (AB 511) that would require certain design criteria to be met prior to local agency approval (see Appendix B). The bill is being proposed for all Met Towers between 50 and 200-feet in height and includes tower paining and marking requirements, and lighting requirements. The applicant has voluntarily proposed to include all of the requirements of the proposed AB 511.

The FAA is also considering revising its current Advisory Circular on Obstruction Marking and Lighting to include guidance for Met Towers (see Appendix C). This proposed guidance includes voluntary measures that tower operators can take to make Met Towers more readily identifiable for crop dusters. These recommendations are similar to those proposed in AB 511 with the exception of lighting. The FAA proposed guidance does not include lighting.

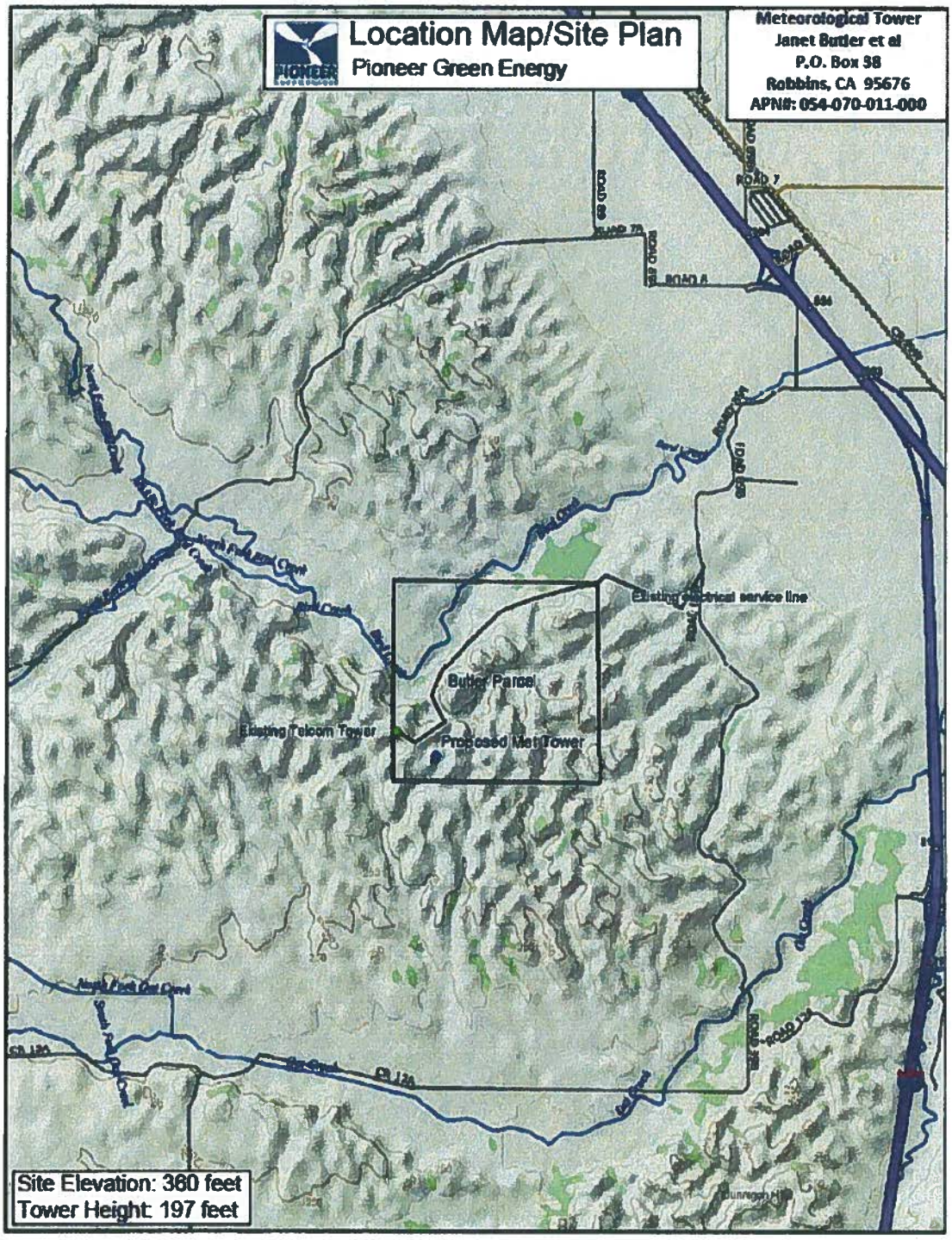



**FIGURE 1**

**VICINITY MAP**


**FIGURE 2**

**AERIAL MAP OF PROJECT SITE**

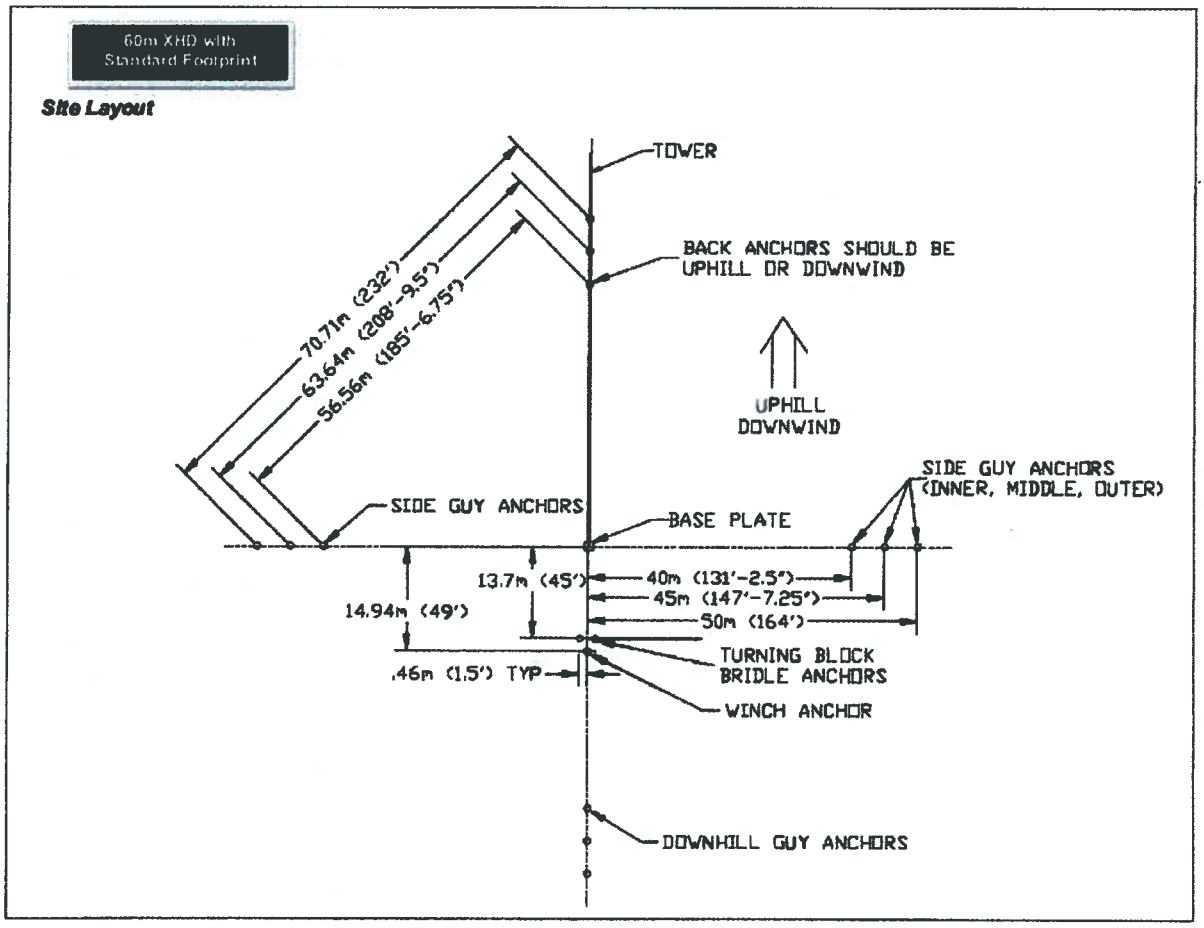



**FIGURE 3**

**SITE PLAN**

## Environmental Factors Potentially Affected

The environmental factors checked below could potentially be affected by this project, involving at least one impact that is still a "Potentially Significant Impact" (before any proposed mitigation measures have been adopted or before any measures have been made or agreed to by the project proponent) as indicated by the checklist on the following pages.

| | | |
|---|---|---|
| ☐ Aesthetics | ☐ Agricultural and Forest Resources | ☐ Air Quality |
| ☐ Biological Resources | ☐ Cultural Resources | ☐ Geology / Soils |
| ☐ Greenhouse Gas Emissions | ☐ Hazards & Hazardous Materials | ☐ Hydrology / Water Quality |
| ☐ Land Use / Planning | ☐ Mineral Resources | ☐ Noise |
| ☐ Population / Housing | ☐ Public Services | ☐ Recreation |
| ☐ Transportation / Traffic | ☐ Utilities / Service Systems | ☐ Mandatory Findings of Significance |

## Determination

On the basis of this initial evaluation:

☒ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have an impact on the environment that is "potentially significant" or "potentially significant unless mitigated" but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards and (2) has been addressed by mitigation measures based on the earlier analysis, as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because the project is consistent with an adopted general plan and all potentially significant effects have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT, the project is exempt from further review under the California Environmental Quality Act under the requirements of Public Resources Code section 21083.3(b) and CEQA Guidelines Section 15183.

| Planner's Signature | Date | Planner's Printed name |
|---|---|---|
| | 5/10/11 | Jeffrey Anderson |

## Purpose of this Initial Study

This Initial Study has been prepared consistent with CEQA Guideline Section 15063, to determine if the project as described herein may have a significant effect upon the environment.

## Evaluation of Environmental Impacts

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained if it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including offsite as well as onsite, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4. A "Less than Significant with Mitigation Incorporated" applies when the incorporation of mitigation measures has reduced an effect from a "Potentially Significant Impact" to a "Less than significant Impact". The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less-than-significant level. (Mitigation measures from Section XVIII, "Earlier Analyses", may be cross-referenced.)
5. A determination that a "Less Than Significant Impact" would occur is appropriate when the project could create some identifiable impact, but the impact would be less than the threshold set by a performance standard or adopted policy. The initial study should describe the impact and state why it is found to be "less than significant."
6. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration [Section 15063(c)(3)(D) of the California Government Code. Earlier analyses are discussed in Section XVIII at the end of the checklist.
7. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, when appropriate, include a reference to the page or pages where the statement is substantiated.
8. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

| I. | AESTHETICS{ TC "I. AESTHETICS" \f M \l "1" }. | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than significant Impact | No Impact |
|---|---|---|---|---|---|
| Would the project: | | | | | |
| a. | Have a substantial adverse effect on a scenic vista? | ☐ | ☐ | ☒ | ☐ |
| b. | Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway? | ☐ | ☐ | ☒ | ☐ |
| c. | Substantially degrade the existing visual character or quality of the site and its surroundings? | ☐ | ☐ | ☒ | ☐ |
| d. | Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area? | ☐ | ☐ | ☒ | ☐ |

## Discussion of Impacts

a) *Less Than Significant Impact.* The Met Tower would not have a substantial effect on a scenic vista. As discussed in (c) below, the rolling hills provide some screening potential of the tower; however the proposed tower would be visible from various agricultural and open space vantage points.

b) *Less Than Significant Impact.* The proposal would not damage any scenic resources along a scenic highway. There are presently no highways within Yolo County that have been officially designated within the California Scenic Highway System. The Yolo County 2030 General Plan designates several routes in Yolo County as local scenic roadways. The nearest section of a local scenic roadway is State Route 16 from the Colusa County line to Capay, which is approximately 10 miles west and southwest of the proposed tower location. The tower would not be visible from this stretch of State Route 16.

c) *Less Than Significant Impact.* Aesthetic perceptions are subjective and the aesthetic impacts associated with this project may be perceived differently by various individuals. The applicant has proposed several safety designs to increase the conspicuity of the Met Tower to aircraft pilots. These safety designs, while increasing conspicuity of the tower to pilots, also have the potential to make the tower more visible to people at ground level. The proposed 197-foot tower tall tower is 8 to 10 inches in diameter and will be painted in seven alternating bands of orange and white. The tower will also include eight (14-inch) orange marker balls. Four of these marker balls will be placed approximately 15 feet from the top of the tower. The other four marker balls will be placed approximately 10 feet from the ground. It is assumed that the marker balls approximately 10 feet from the ground will not be visible at the ground level at any distance off of the subject property. The applicant has also proposed to install bird flight diverters as a way to mitigate against potential bird strikes with the tower and guy wires. Bird flight diverters are small coil shaped devices that are secured to the guy wires to increase the visibility of the wires to diurnally active birds,

including raptors and migrating birds. Although effective for mitigating bird strikes, bird flight diverters are not easily seen by people at any significant distance.

The Met Tower will also include a single red flashing light at the top of the tower to increase aviation safety (particularly for crop dusters). The lighting will be upward facing and only operational at nighttime, or during inclement weather where visibility is significantly diminished. The lighting is typical of other tower lighting found on towers throughout agricultural areas in the county.

The surrounding properties are all agricultural (range land) and there are no home sites in the vicinity. The rolling hills in the project area have the potential to partially screen the tower from different vantage points and provide an additional terrain feature behind the tower so that the tower is not viewed entirely against the sky. The project may be visible from some vantage points in the surrounding area; however the temporary Met Tower would not substantially degrade the existing visual character or quality of the site and its surroundings.

d) *Less Than Significant Impact.* The proposed Met Tower will be painted in seven alternating bands of orange and white. This color scheme will not produce substantial glare in the project area. The project will include a single red flashing light at the top of the tower. The light will be visible to rural home sites (closest home site is 1.6 miles) and other vantage points in the nearby area, including county roads and portions of I-5. Lighting of structures and towers in rural and urban areas is a proven practice for increasing aircraft safety. Although the light will be visible from select vantage points, this impact is less than significant.

| II. | AGRICULTURAL AND FOREST RESOURCES{ TC "II. AGRICULTURAL RESOURCES" \f M \l "1" }. | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than significant Impact | No Impact |
|---|---|---|---|---|---|
| In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and the forest carbon measurement methodology provided in the Forest Protocols adopted by the California Air Resources Board. Would the project: | | | | |
| a. | Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | ☐ | ☐ | ☒ | ☐ |
| b. | Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract? | ☐ | ☐ | ☐ | ☒ |

| II. | AGRICULTURAL AND FOREST RESOURCES{ TC "II. AGRICULTURAL RESOURCES" \f M \l "1" }. | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than significant Impact | No Impact |
|---|---|---|---|---|---|
| c. | Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined in Public Resources Code section 4526)? | ☐ | ☐ | ☐ | ☒ |
| d. | Result in the loss of forest land or conversion of forest land to non-forest use? | ☐ | ☐ | ☐ | ☒ |
| e. | Involve other changes in the existing environment that, due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use? | ☐ | ☐ | ☐ | ☒ |

## Discussion of Impacts

a) *Less Than Significant Impact.* The project site is designated as "Farmland of Local Importance" on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. The proposed Met Tower is temporary (lasting approximately three years) and will not convert the land to a non-agricultural use.

b) *No Impact.* The subject property is zoned Agricultural Preserve (A-P), but is not enrolled in the Williamson Act. Wind energy facilities and wind testing facilities are permitted within the A-P zone in accordance with the Wind Energy Ordinance (Yolo County Code Section 8-2.2418).

c) and d) *No Impact.* The project does not conflict with existing zoning for, or cause rezoning of, forest land and would not result in the loss of forest land or conversion of forest land to non-forest use.

e) *No Impact.* The project is consistent with the General Plan and zoning designations and does not involve any other changes that could result in the conversion of farmland to non-agricultural uses. The proposed project is a temporary Met Tower located on a 635-acre parcel that is part of a larger 3,800± acre ranch property.

| III. | AIR QUALITY{ TC "III. AIR QUALITY" \f M \l "1" }. | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than significant Impact | No Impact |
|---|---|---|---|---|---|
| Where applicable, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project: | | | | | |
| a. | Conflict with or obstruct implementation of the applicable air quality plan? | ☐ | ☐ | ☐ | ☒ |

| III. | AIR QUALITY{ TC "III. AIR QUALITY" \f M \l "1" }. | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than significant Impact | No Impact |
|---|---|---|---|---|---|
| b. | Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | ☐ | ☐ | ☐ | ☒ |
| c. | Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)? | ☐ | ☐ | ☒ | ☐ |
| d. | Expose sensitive receptors to substantial pollutant concentrations? | ☐ | ☐ | ☐ | ☒ |
| e. | Create objectionable odors affecting a substantial number of people? | ☐ | ☐ | ☐ | ☒ |

## Environmental Setting

The project site is within the Yolo-Solano Air Quality Management District (YSAQMD), and the Sacramento Valley Air Basin { TC "South Coast Air Basin (SCAB)" \f A \l "1" }regulates air quality conditions within Yolo County. Yolo County is classified as a non-attainment area for several air pollutants, including ozone ($O_3$( TC "ozone ($O_3$" \f A \l "1" ) and particulate matter 10 microns or less in diameter ($PM_{10}$) for both federal and state standards, and is classified as a moderate maintenance area for carbon monoxide (CO) by the state.

Development projects are most likely to violate an air quality plan or standard, or contribute substantially to an existing or project air quality violation, through generation of vehicle trips.

The YSAQMD sets threshold levels for use in evaluating the significance of criteria air pollutant emissions from project-related mobile and area sources in the Handbook for Assessing and Mitigating Air Quality Impacts (YSAQMD, 2007). The handbook identifies quantitative and qualitative long-term significance thresholds for use in evaluating the significance of criteria air pollutant emissions from project-related mobile and area sources. These thresholds include:

- Reactive Organic Gases (ROG): 10 tons per year (approx. 55 pounds per day)
- Oxides of Nitrogen (NOx): 10 tons per year (approx. 55 pounds per day)
- Particulate Matter ($PM_{10}$): 80 pounds per day
- Carbon Monoxide (CO): Violation of State ambient air quality standard

## Discussion of Impacts

a) *No Impact.* The project would not substantially conflict with or obstruct implementation of the Yolo Solano Air Quality Management District Air Quality Attainment Plan (1992), the Sacramento Area Regional Ozone Attainment Plan (1994), or the goals and objectives of the Yolo County 2030 General Plan.

b) *Less Than Significant Impact.* The Yolo-Solano Region is a non-attainment area for state particulate matter ($PM_{10}$) and ozone standards, and the Federal ozone standard. The project would not contribute significantly to air quality impacts, including $PM_{10}$, since site preparation would by limited to installation of a Met Tower and guy wires. Ground disturbance from construction activity will be minimal. Construction activities, including vehicular traffic, would generate a minor temporary or short-term increase in $PM_{10}$. Based on previous Met Tower installations, the applicant anticipates that the tower can be installed in two days and decommissioned in one day. The installation crew uses two (2) four-wheel drive pickup trucks to transport the equipment and tools to the site. For a typical installation/decommissioning, only one (1) trip/delivery (roundtrip) to the site is expected. This impact is considered less than significant because any potentially sensitive receptors would be exposed to minor amounts of construction dust and equipment emissions for short periods of time with no long-term exposure to potentially affected groups. The project applicant would be required to comply with all standards as applied by the YSAQMD to minimize dust and other construction related pollutants. In addition, prior to an building permit issuance, the applicant is required to obtain any permits as required by the YSAQMD to ensure the project complies with District regulations. Thresholds for project-related air pollutant emissions would not exceed significant levels as set forth in the 2007 YSAQMD Handbook.

c) *Less Than Significant Impact.* Effects on air quality can be divided into short-term construction-related effects and those associated with long-term aspects of the project. Short-term construction impacts are addressed in (b), above. Long-term mobile source emissions from a temporary Met Tower would be negligible and would not exceed thresholds established by the YSAQMD Handbook for Assessing and Mitigating Air Quality Impacts (2007), and would not be cumulatively considerable for any non-attainment pollutant from the project. Therefore, the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant.

d) and e) *No Impact.* The project site is located in a rural agricultural area, and is part of a 3,800± acre ranch property. There are no sensitive receptors in the vicinity of the project site ("sensitive receptors" refers to those segments of the population most susceptible to poor air quality, i.e. children, elderly and the sick, and to certain at-risk sensitive land uses such as schools, hospitals, parks, or residential communities). The proposed project will not expose sensitive receptors to pollutant concentrations in excess of standards. The proposed project and associated uses would not create objectionable odors.

| IV. | BIOLOGICAL RESOURCES{ TC "IV. BIOLOGICAL RESOURCES" \f M \l "1" }. | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than significant Impact | No Impact |
|---|---|---|---|---|---|
| Would the project: | | | | | |
| a. | Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | ☐ | ☐ | ☒ | ☐ |
| b. | Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | ☐ | ☐ | ☐ | ☒ |
| c. | Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means? | ☐ | ☐ | ☐ | ☒ |
| d. | Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | ☐ | ☐ | ☒ | ☐ |
| e. | Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | ☐ | ☐ | ☐ | ☒ |
| f. | Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan? | ☐ | ☐ | ☐ | ☒ |

## Environmental Setting

The applicant commissioned Stantec Consulting Services to conduct a reconnaissance-level biological survey of the proposed Met Tower location (Appendix D). A thorough survey was completed to identify habitats within the Met Tower project location and along proposed access to the site. The topography of the project location consists of annual grassland and rolling hills. The habitat consists of non-native grasses and forbs including non-native wild oat (*Avena spp.*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeacus*), and barleys (*Hordeum spp.*). No sensitive habitat including vernal pools, streams or wetlands, or trees were located within the vicinity of the proposed Met Tower location. No elderberry shrubs or trees were located in the proposed project area. The survey also concluded that the Met Tower location did not contain nesting habitat for Swainson's hawk, burrowing owl, white-tailed kite, or any other raptor or migratory bird nesting habitat.

## Discussion of Impacts

a) *Less Than Significant Impact.* The project location does not include vernal pools, streams, wetlands, or any trees. Therefore it is unlikely the proposed project would have any impact on candidate, sensitive, or special status plants, crustaceans, insects, amphibians, reptiles, or fish species. Therefore, the only potential impact the proposed Met Tower would have on candidate, sensitive, or special status species would be on birds. As mentioned above, there are no trees or burrows near the project location, so it is unlikely any nesting habitat exists. There is however, the potential for bird collisions with the tower and guy wires. The California Natural Diversity Database search results, provided by the applicant, determined that there were no documented occurrences of special status species within one-mile of the proposed Met Tower location (Appendix E). The California Natural Diversity Data Base (CNDDB) 7 ½ Minute Quad Map (Zamora 530C) showed that there is potential for Swainson's hawk, mountain plover, and burrowing owl in the Dunnigan Hills area, but not necessarily on the project site. The list below displays the birds on the CNDDB 7 ½ Minute Quad Map:

| ***Common Name*** | ***Federal Status*** | ***California Status*** | ***DFG Status*** |
|---|---|---|---|
| Swainson's hawk | None | Threatened | None |
| mountain plover | Proposed Threatened | None | Species of Special Concern |
| burrowing owl | None | None | Species of Special Concern |

The following discussion is excerpted from a study completed by Jim Estep in 2010 on the biological impacts of a proposed 365-foot guy-wired radio tower (ZF #2009-001) in Yolo County, and is applicable to similar communication and meteorological towers:

> *It is important to understand that any analysis of avian mortality issues with respect to a specific project is necessarily limited by scientific uncertainty on a number of important points. For example, in the absence of long-term project-specific research on avian movements and collision susceptibility, there is no credible scientific basis for estimating the incidence of bird collisions in connection with a proposed communications tower or similar project. Science simply cannot forecast how often bird strikes may occur. In addition, while there are numerous reported bird collision incidents at communication towers, particularly of nocturnal migrants (Kerlinger 2000), there any no studies that demonstrate a clear relationship between bird collisions with communication towers and population declines. As a result, unless the project lies within a particularly important bird flight corridor or in association with habitats that support large bird populations, there is no credible scientific basis for the notion that a particular facility may contribute to a measurable population decline over time, particularly if the recommended safeguards (e.g., flight diverters and lighting) are incorporated into the project design.*

The unique topographical features of the Dunnigan Hills have the potential to attract migrating birds; however, it is unknown as to what extent this may be. The applicant has incorporated project designs recommended by the USFWS (as discussed in (d) below) to minimize bird collisions. Additionally, as a Condition of Approval, the applicant will be required to participate in the interim Yolo County Habitat Conservation Plan pursuant to the Memorandum of Agreement between the Joint Powers Agency (dated August 7, 2002) entered into by and between the California Department of Fish and Game and the

Yolo County HCP/NCCP Joint Powers Agency for Swainson's hawk habitat mitigation. The area subject to the agreement is expected to be approximately 1.25 acres, or as determined by the Joint Powers Agency or California Department of Fish and Game.

b) and c) *No Impact.* The project would have no substantial adverse effect on any wetlands, riparian habitat, or any other sensitive natural community identified in local or regional plans, policies, or regulations. The construction and proposed placement of the Met Tower will be located on an area of the project site that is accessed via an existing internal dirt road. The biological survey concluded that no sensitive habitat including vernal pools, streams or wetlands, or trees were located within the vicinity of the proposed Met Tower location.

d) *Less Than Significant Impact.* There are various factors that need to be considered when determining the impact the proposed project will have on wildlife species. These factors include tower height, number of guy wires, species present in the vicinity of the tower, tower lighting, geographic location, and surrounding land use.

The tower is proposed to be held in place with 24 guy wires (four sets with 6 guy wires per set) located at varying heights on the tower. Each set of guy wires is attached to anchors placed at 90 degree angles at points approximately 40, 45, and 50 meters from the base of the tower. The guy wires have the potential to impede the daily movement routes of birds, especially in raptor concentration areas. The project location provides potential foraging habitat for raptors and other birds of prey. When locating a tower in an area of known raptor concentration, the USFWS recommends that daytime visual markers (bird flight diverters) should be installed on guy wires to prevent collisions by diurnally active species. The applicant has proposed to install bird flight diverters on the guy wires to minimize the impact of bird strikes with the guy wires.

Raptors are less susceptible to blind collision with communication towers and guy wires due to their exceptional eyesight and maneuverability. Collisions are possible during daytime inclement weather; however, raptors tend not to fly during rainy or low visibility conditions (Estep, 2010). Therefore, the proposed project is unlikely to pose a significant collision mortality risk to raptor species. The bird flight diverters attached to the guy wires will further reduce this risk.

The unique topographical features of the Dunnigan Hills has the potential to attract migrating birds, however, it is unknown as to what extent this may be. Most night migrating birds fly at heights well above 197-feet and would not likely be affected by the tower. Nocturnal migrating birds are thought to be attracted to artificial light sources on communication towers, Met Towers, etc. In his 2010 report, Estep summarizes the impact that tower lighting has on nocturnal migrating birds (Estep, 2010):

> *While some bird species are susceptible to blind collisions with tower structures in some circumstances, research on avian collisions suggests that neotropical migrants, such as vireos, warblers, and thrushes, are most susceptible to collision mortality at communication towers due to night migration and effects of tower lighting (Kerlinger 2000). This occurs mainly during low cloud or foggy conditions. The tower lights refract off the water particles creating an illuminated area around the tower. Migrating flocks can lose stellar cues for nocturnal migration during these weather conditions. They enter the lighted space around the tower and are reluctant to leave, continually circling around the illuminated tower. As large groups of birds become*

*entrapped in the lighted space, mortality occurs when they collide with the tower, the guy wires, the ground, and with each other.*

*The Central Valley is a major migration corridor for neotropical migrants. Generally, migration corridors follow riparian or other wooded habitat that can be used during migration. The extent of migrating birds that may use and therefore be susceptible to collisions with towers in the agricultural areas of the Central Valley is not sufficiently known.*

According to Estep, research suggests that light flash duration, rather than color, may be a more critical factor reducing bird collisions. Therefore, the longer the off phase between the flash phase of the light pulses, the less likely the birds are to be attracted to the lighting. The applicant has proposed to use a red flashing light (as acceptable to the FAA). A Condition of Approval will be added to ensure the light operates with the longest allowable off phase.

e) *No Impact.* The proposed project does not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

f) *No Impact.* The proposed project would not conflict with any local policies or ordinances protecting biological resources. The Yolo County Habitat Conservation Plan (HCP)/Natural Communities Conservation Plan (NCCP) is in preparation by the Natural Heritage Program. Thus, the project would not conflict with the provisions of any adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan.

| V. | CULTURAL RESOURCES{ TC "V. CULTURAL RESOURCES" \f M \l "1" }. | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than significant Impact | No Impact |
|---|---|---|---|---|---|
| Would the project: | | | | | |
| a. | Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5? | ☐ | ☐ | ☐ | ☒ |
| b. | Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5? | ☐ | ☐ | ☐ | ☒ |
| c. | Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | ☐ | ☐ | ☐ | ☒ |
| d. | Disturb any human remains, including those interred outside of formal cemeteries? | ☐ | ☐ | ☒ | ☐ |

## Discussion of Impacts

a) through c) *No Impact.* The construction of a temporary Met Tower would not affect any historic, cultural, or paleontological resources known or suspected to occur on the project site. The project site is not known to have any significant historical, archaeological, or paleontological resources as defined by the criteria within the CEQA Guidelines.

d) *Less Than Significant Impact.* No human remains are known or predicted to exist in the project area. However, the potential exists during construction to uncover previously unidentified resources. Section 7050.5 of the California Health and Safety Code states that when human remains are discovered, no further site disturbance shall occur until the County coroner has determined that the remains are not subject to the provisions of Section 27491 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, in the manner provided in Section 5097.98 of the Public Resources Code. If the coroner determines that the remains are not subject to his or her authority and the remains are recognized to be those of a Native American, the coroner shall contact the Native American Heritage Commission within 24 hours.

| VI. | GEOLOGY AND SOILS{ TC "VI. GEOLOGY AND SOILS" \f M \l "1" }. | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than significant Impact | No Impact |
|---|---|---|---|---|---|
| Would the project: | | | | | |
| a. | Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: | ☐ | ☐ | ☒ | ☐ |
| | 1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | | | | |
| | 2. Strong seismic groundshaking? | | | | |
| | 3. Seismic-related ground failure, including liquefaction? | | | | |
| | 4. Landslides? | | | | |
| b. | Result in substantial soil erosion or the loss of topsoil? | ☐ | ☐ | ☐ | ☒ |
| c. | Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse? | ☐ | ☐ | ☐ | ☒ |
| d. | Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | ☐ | ☐ | ☒ | ☐ |
| e. | Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater? | ☐ | ☐ | ☐ | ☒ |

## Discussion of Impacts

a) Less Than Significant Impact:

1. The project site is not located within an Alquist-Priolo Earthquake Fault Zone. However, the site is located within approximately one mile of the Dunnigan Hills Fault and within five miles of a smaller Holocene fault. The project site can be expected to experience moderate to strong ground shaking during future seismic events along active faults throughout Northern California or on smaller active faults located in the project vicinity. The construction of the Met Tower will be required to comply with all applicable Uniform Building Code requirements.

2. Any major earthquake damage on the project site is likely to occur from ground shaking, and seismically related ground and structural failures. Local soil conditions, such as soil strength, thickness, density, water content, and firmness of underlying bedrock affect seismic response. Seismically induced shaking and some damage should be expected to occur during a major event but damage should be no more severe in the project area than elsewhere in the region. The Met Tower will be built in accordance with Uniform Building Code requirements and will be generally flexible enough to sustain only minor structural damage from ground shaking. Therefore, people and structures would not be exposed to potential substantial adverse effects involving strong seismic ground shaking.

3. The proposed project is not located within close proximity to any people or structures. The tower will be located on a private ranch property located in the Dunnigan Hills. Effects of liquefaction or cyclic strength degradation beneath the project vicinity during seismic events are unlikely. In the event of tower failure, no humans or structures would be affected.

4. The proposed project is a meteorological tower anchored by guy wires, and would not expose people or structures to potential landslides.

b) *No Impact.* Only a small area of ground disturbance is proposed for the placement of the Met Tower and guy wire anchors. Substantial soil erosion or loss of topsoil is unlikely to occur.

c) *No Impact.* The project is not located on unstable geologic materials and would not have any affect on the stability of the underlying materials or on the underlying materials to potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. Onsite or off-site potential landslides, liquefaction or other cyclic strength degradation during seismic events are unlikely.

d) *Less Than Significant Impact.* The existence of substantial areas of expansive and/or corrosive soils has been documented in the project area. The Met Tower will be built in accordance with Uniform Building Code requirements and a geotechnical report, along with soil samples, will be required as part of the building permit process.

e) *No Impact.* The proposed Met Tower will not be served by a septic system.

| VII. | GREENHOUSE GAS EMISSIONS/CLIMATE CHANGE{ TC "VII. HAZARDS AND HAZARDOUS MATERIALS" \f M \l "1" }. | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than significant Impact | No Impact |
|---|---|---|---|---|---|
| Would the project: | | | | | |
| a. | Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | ☐ | ☐ | ☒ | ☐ |
| b. | Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases? | ☐ | ☐ | ☐ | ☒ |
| c. | Be affected by climate change impacts, e.g., sea level rise, increased wildfire dangers, diminishing snow pack and water supplies, etc.? | ☐ | ☐ | ☐ | ☒ |

## Environmental Setting

The issue of combating climate change and reducing greenhouse gas emissions (GHG) has been the subject of recent state legislation (AB 32 and SB 375). The Governor's Office of Planning and Research has recommended changes to the California Environmental Quality Act (CEQA) Guidelines, and the environmental checklist which is used for Initial Studies such as this one. The recommended changes to the checklist, which have not yet been approved by the state, are incorporated above in the two questions related to a project's GHG impacts. A third question has been added by Yolo County to consider potential impacts related to climate change's effect on individual projects, such as sea level rise and increased wildfire dangers. To date, specific thresholds of significance to evaluate impacts pertaining to GHG emissions have not been established by local decision-making agencies, the Yolo Solano Air Quality Management District, the state, or the federal government. However, this absence of thresholds does not negate CEQA's mandate to evaluate all potentially significant impacts associated with the proposed project.

## Discussion of Impacts

a) *Less Than Significant Impact.* The proposed project is an unmanned temporary Met Tower. Aside from the few truck trips during construction and eventual decommissioning of the tower, the only vehicular traffic generated by the project would be one to two vehicle trips per year for routine maintenance purposes. Thus, the project would not generate greenhouse gas emissions that will have a significant impact on the environment.

b) *No Impact.* The proposed project would not conflict with any applicable plan, policy or regulation adopted to reduce GHG emissions, including the Yolo County Climate Action Plan or the numerous policies of Yolo County 2030 General Plan.

c) *No Impact.* The proposed temporary Met Tower will not be at significant risk of wildfire dangers or diminishing snow pack or water supplies.

| VII. | HAZARDS AND HAZARDOUS MATERIALS{ TC "VII. HAZARDS AND HAZARDOUS MATERIALS" \f M \l "1" }. | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than significant Impact | No Impact |
|---|---|---|---|---|---|
| Would the project: | | | | | |
| a. | Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | ☐ | ☐ | ☐ | ☒ |
| b. | Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | ☐ | ☐ | ☐ | ☒ |
| c. | Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | ☐ | ☐ | ☐ | ☒ |
| d. | Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | ☐ | ☐ | ☐ | ☒ |
| e. | Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area? | ☐ | ☐ | ☒ | ☐ |
| f. | Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area? | ☐ | ☐ | ☒ | ☐ |
| g. | Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | ☐ | ☐ | ☐ | ☒ |
| h. | Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? | ☐ | ☐ | ☐ | ☒ |

## Discussion of Impacts

a) and b) *No Impact.* The construction and operation of the proposed project would not result in any new hazardous emissions or materials. There will be no storage of fuel, oil, or other potentially hazardous materials. All electronic equipment will be properly disposed of or reused by the project applicant.

c) *No Impact.* See (a) and (b), above. Additionally, the project site is not located within one-quarter mile of an existing or proposed school.

d) *No Impact.* The project site is not located on a site that is included on a list of hazardous materials sites compiled by the Yolo County Environmental Health Division-Hazardous Waste Site Files pursuant to Government Code 65962.5.

e) *Less Than Significant Impact.* The project site is not located within an airport land use plan or within two miles of a public airport or public use airport. In relation to the proposed tower location, the nearest airports are as follows: Watts-Woodland Airport (approx. 12 mi. SE); Yolo County Airport (approx. 18 mi. SE); UC Davis Airport (approx. 22 mi. SE); and Sacramento International Airport (approx. 22 mi. E). However, the project is in an area which may be used by crop dusting planes. The applicant has proposed to incorporate several design features to increase the conspicuity of the tower to aircraft pilots, such as crop dusters. These design features include: painting the tower in seven alternating bands of orange and white, installing eight orange marker balls on the guy wires, installing a single red flashing light at the top of the tower, and installing seven foot safety sleeves on the guy wire anchor points. Local aircraft sprayers registered with the County have received notice of this IS/MND and as a condition of project approval, the applicant will be required to notify aircraft sprayers registered with the county of the exact location of the proposed tower, as required by Section 8-2.2418.4(e) of the County Code.

f) *Less Than Significant Impact.* See (e), above. Additionally, the project site is not located within the vicinity of any other known private airstrip.

g) *No Impact.* The project would not interfere with any adopted emergency response or evacuation plans.

h) *No Impact.* The project site is not located in a wildland area and, therefore, would not be at risk from wildland fires. Additionally, the project will be unmanned and will not include any other structures other than the tower.

| VIII. | HYDROLOGY AND WATER QUALITY{ TC "VIII. HYDROLOGY AND WATER QUALITY" \f M \l "1" }. | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than significant Impact | No Impact |
|---|---|---|---|---|---|
| Would the project: | | | | | |
| a. | Violate any water quality standards or waste discharge requirements? | ☐ | ☐ | ☐ | ☒ |
| b. | Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)? | ☐ | ☐ | ☐ | ☒ |

| VIII. | HYDROLOGY AND WATER QUALITY{ TC "VIII. HYDROLOGY AND WATER QUALITY" \f M \l "1" }. | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than significant Impact | No Impact |
|---|---|---|---|---|---|
| c. | Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or off-site? | ☐ | ☐ | ☐ | ☒ |
| d. | Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or off-site? | ☐ | ☐ | ☐ | ☒ |
| e. | Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? | ☐ | ☐ | ☐ | ☒ |
| f. | Otherwise substantially degrade water quality? | ☐ | ☐ | ☐ | ☒ |
| g. | Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? | ☐ | ☐ | ☐ | ☒ |
| h. | Place within a 100-year flood hazard area structures that would impede or redirect floodflows? | ☐ | ☐ | ☐ | ☒ |
| i. | Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam? | ☐ | ☐ | ☐ | ☒ |
| j. | Contribute to inundation by seiche, tsunami, or mudflow? | ☐ | ☐ | ☐ | ☒ |

## Discussion of Impacts

a) *No Impact.* The proposed project would not discharge any pollutants into the water system, or result in any violations of existing requirements.

b) *No Impact.* The proposed project would not affect any onsite well and would not deplete groundwater supplies or interfere with groundwater recharge.

c) through f) *No Impact.* The proposed project would not modify any drainage patterns or change absorption rates, or the rate and amount of surface runoff. No additional impacts to water quality are anticipated.

g) *and* h) *No Impact.* The proposed project includes does not include any housing. The project site is not located within the 100-year or 500-year floodplains.

i) *No Impact.* The project site is not located immediately down stream of a dam or adjacent to a levee that would expose individuals to risk from flooding.

j) *No Impact.* The project area is not located near any large bodies of water that would pose a seiche or tsunami hazard. In addition, the project site is not located near any physical or geologic features that would produce a mudflow hazard.

| IX. | LAND USE AND PLANNING{ TC "IX. LAND USE AND PLANNING" \f M \l "1" }. | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than significant Impact | No Impact |
|---|---|---|---|---|---|
| Would the project: | | | | | |
| a. | Physically divide an established community? | ☐ | ☐ | ☐ | ☒ |
| b. | Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | ☐ | ☐ | ☐ | ☒ |
| c. | Conflict with any applicable habitat conservation plan or natural community conservation plan? | ☐ | ☐ | ☐ | ☒ |

## Discussion of Impacts

a) *No Impact.* The project site is located in a rural agricultural area, well outside any established community; therefore, there are no impacts to established communities.

b) *No Impact.* The proposed project would not conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. The Yolo County 2030 General Plan encourages the installation of renewable energy technologies in order to promote GHG emission reductions (Policy CO-8.5). Though the tower is not itself a renewable energy source, it is necessary to determine the feasibility of installing a large scale renewable energy (wind) project. Any future large scale wind project will require approval of a Major Use Permit as described in Yolo County Code Section 8-2.2418 (Small and Large Wind Energy Systems).

c) *No Impact.* The project would not conflict with the provisions of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. The Yolo County Habitat Conservation Plan (HCP)/Natural Communities Conservation Plan (NCCP) is in preparation by the Natural Heritage Program.

| X. | MINERAL RESOURCES{ TC "X. MINERAL RESOURCES" \f M \l "1" }. | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than significant Impact | No Impact |
|---|---|---|---|---|---|
| Would the project: | | | | | |
| a. | Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | ☐ | ☐ | ☐ | ☒ |
| b. | Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan? | ☐ | ☐ | ☐ | ☒ |

## Discussion of Impacts

a) and b) *No impact.* The project area has not been identified as an area of significant aggregate deposits, as classified by the State Department of Mines and Geology.

| XI. | NOISE{ TC "XI. NOISE" \f M \l "1" }. | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|---|
| Would the project: | | | | | |
| a. | Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies? | ☐ | ☐ | ☐ | ☒ |
| b. | Expose persons to or generate excessive groundborne vibration or groundborne noise levels? | ☐ | ☐ | ☐ | ☒ |
| c. | Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | ☐ | ☐ | ☐ | ☒ |
| d. | Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | ☐ | ☐ | ☐ | ☒ |
| e. | Be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels? | ☐ | ☐ | ☐ | ☒ |
| f. | Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels? | ☐ | ☐ | ☐ | ☒ |

## Discussion of Impacts

a) through d) *No Impact.* Yolo County has not adopted a noise ordinance which sets specific noise levels for different zoning districts or for different land uses in the unincorporated area. However, the State of California Department of Health Services developed recommended Community Noise Exposure standards, which are set forth in the State's General Plan Guidelines (2003). These standards are also included in the Yolo County 2030 Countywide General Plan and used to provide guidance for new development projects. The recommended standards provide acceptable ranges of decibel (dB) levels. The noise levels are in the context of Community Noise Equivalent Level (CNEL) measurements, which reflect an averaged noise level over a 24-hour or annual period.

The proposed project is located in a rural agricultural area and there are no sensitive receptors in the vicinity. The project site is surrounded by agricultural uses for several miles in each direction. The noise guidelines define 80-85 dB CNEL for outdoor noise level in agricultural areas as "normally acceptable." The proposed project includes the installation of a 197-foot Met Tower including guy wires. The tower will be unmanned and will include a solar powered battery pack. The proposed project will be located on a 635± acre parcel, which is part of a 3,800± acre ranch property. The proposed Met Tower will not produce noise or vibration that will exceed any thresholds during the construction, operation, or decommissioning phases.

e and f) *No Impact.* The project site is not located within an airport land use plan nor is it within two miles of a public airport, public use airport, or private airstrip.

| XII. | POPULATION AND HOUSING{ TC "XII. POPULATION AND HOUSING" \f M \l "1" }. | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than significant Impact | No Impact |
|---|---|---|---|---|---|
| Would the project: | | | | | |
| a. | Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)? | ☐ | ☐ | ☐ | ☒ |
| b. | Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ☒ |
| c. | Displace a substantial number of people, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ☒ |

## Discussion of Impacts

a) through c) *No Impact.* The proposed project is a temporary Met Tower and would not induce any population growth or displace any existing housing units or people.

| XIII. | PUBLIC SERVICES{ TC "XIII. PUBLIC SERVICES" \f M \l "1" }. | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than significant Impact | No Impact |
|---|---|---|---|---|---|
| Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services: | | | | | |
| a. | Fire protection? | ☐ | ☐ | ☐ | ☒ |
| b. | Police protection? | ☐ | ☐ | ☐ | ☒ |
| c. | Schools? | ☐ | ☐ | ☐ | ☒ |
| d. | Parks? | ☐ | ☐ | ☐ | ☒ |
| e. | Other public facilities? | ☐ | ☐ | ☐ | ☒ |

## Discussion of Impacts

a) through e) *No Impact.* The proposed project is a temporary Met Tower would not be expected to increase the demand for fire and police protection services, schools, parks, or other public facilities and services.

| XIV. | RECREATION{ TC "XIV. RECREATION" \f M \l "1" }. | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than significant Impact | No Impact |
|---|---|---|---|---|---|
| Would the project: | | | | | |
| a. | Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | ☐ | ☐ | ☐ | ☒ |
| b. | Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment? | ☐ | ☐ | ☐ | ☒ |

## Discussion of Impacts

a) and b) *No Impact.* The proposed project would not affect any existing or future recreational facilities.

| XV. | TRANSPORTATION/TRAFFIC{ TC "XV. TRANSPORTATION/TRAFFIC" \f M \l "1" }. | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than significant Impact | No Impact |
|---|---|---|---|---|---|
| Would the project: | | | | | |
| a. | Exceed the capacity of the existing circulation system, based on an applicable measure of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? | ☐ | ☐ | ☐ | ☒ |
| b. | Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? | ☐ | ☐ | ☐ | ☒ |
| c. | Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? | ☐ | ☐ | ☒ | ☐ |
| d. | Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | ☐ | ☐ | ☐ | ☒ |
| e. | Result in inadequate emergency access? | ☐ | ☐ | ☐ | ☒ |
| f. | Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)? | ☐ | ☐ | ☐ | ☒ |

## Discussion of Impacts

a) and b) *No Impact.* The roadway network within the unincorporated parts of the county is primarily rural in character, serving small communities and agricultural uses through a system of State freeways and highways, county roads (including arterials, collectors and local streets) and private roads. Interstate 80, Interstate 5 and Interstate 505 are the primary transportation corridors extending through the county and serve all of the county's major population centers including Davis, West Sacramento, Winters and Woodland. The construction, maintenance, and decommissioning of the Met Tower would generate a limited number of truck trips. However, this would not exceed the capacity of the existing circulation system nor exceed a level of service standard for any road.

c) *Less Than Significant Impact.* The proposed Met Tower will not result in a change in air traffic patterns, including an increase in traffic levels or a change in location that results in substantial safety risks. The applicant has proposed to incorporate several design features to increase the conspicuity of the tower to aircraft pilots. These design features include: painting the tower in seven alternating bands of orange and white, installing eight orange marker balls on the guy wires, and installing seven foot safety sleeves on the guy wire anchor points.

d) *No Impact.* The proposed project does not incorporate design features that would substantially increase hazards or introduce incompatible uses.

e) *No Impact.* The proposed project would not result in inadequate emergency access. Access to the subject site is from a private driveway via County Road 90.

f) *No Impact.* The proposed project would not conflict with any adopted policies, plans, or programs supporting alternative transportation.

| XVI. | UTILITIES AND SERVICE SYSTEMS{ TC "XVI. UTILITIES AND SERVICE SYSTEMS" \f M \l "1" }. | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than significant Impact | No Impact |
|---|---|---|---|---|---|
| Would the project: | | | | | |
| a. | Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | ☐ | ☐ | ☐ | ☒ |
| b. | Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | ☐ | ☐ | ☐ | ☒ |
| c. | Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | ☐ | ☐ | ☐ | ☒ |
| d. | Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed? | ☐ | ☐ | ☐ | ☒ |
| e. | Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | ☐ | ☐ | ☐ | ☒ |
| f. | Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | ☐ | ☐ | ☐ | ☒ |
| g. | Comply with federal, state, and local statutes and regulations related to solid waste? | ☐ | ☐ | ☐ | ☒ |

## Discussion of Impacts

a) through g) *No Impact.* The proposed project is an unmanned, temporary Met Tower. This facility would not create any new demand for public utilities or public service systems and would not require the construction of any new facilities.

| XVII. | MANDATORY FINDINGS OF SIGNIFICANCE{ TC "XVII. MANDATORY FINDINGS OF SIGNIFICANCE" \f M \l "1" }. | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than significant Impact | No Impact |
|---|---|---|---|---|---|
| a. | Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? | ☐ | ☐ | ☒ | ☐ |
| b. | Does the project have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.) | ☐ | ☐ | ☐ | ☒ |
| c. | Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly? | ☐ | ☐ | ☐ | ☒ |

## Discussion of Impacts

a) *Less Than Significant.* The proposed Met Tower has the potential to interfere with nocturnal migrant birds and the daily movement of diurnal birds. The applicant has proposed to follow the USFWS guidelines (Appendix A) and will install bird flight diverters to minimize potential bird strikes. As proposed and described in this Initial Study, the project will not reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory.

b) *No Impact.* Based on the analysis provided in this Initial Study, the project will not have any potential cumulative impacts.

c) *No Impact.* Based on the analysis provided in this Initial Study, the proposed project would not result in environmental effects that could cause adverse effects on human beings, either directly or indirectly. The construction of the Met Tower will comply with all Uniform Building requirements.

## APPENDICES

A: USFWS Communication Tower Siting Guidelines
B: Assembly Bill 511 (proposed)
C: FAA Docket No: FAA 2010—1326
D: Stantec Biological Survey (May 4, 2011)
E: CNDDB Species Status Species Map

## REFERENCES


- Application materials
- 2030 Yolo Countywide General Plan
- Biological assessment prepared by Stantec, May 2011
- Estep, Jim. *Biological Resource Assessment of the Proposed Results Radio, LLC Radio Tower Facility at the Yolo County Central Landfill, Yolo County, California.* July 16, 2010
- Yolo County Zoning Ordinance, Title 8, Chapter 2 of the County Code, 2004, as amended
- Yolo Solano Air Quality Management District, *Handbook for Assessing and Mitigating Air Quality Impacts,* 2007
- Staff experience and knowledge

APPENDIX A

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington, D.C. 20240

In Reply Refer To:
*FWSIFHC/DHCIBFA*

Memorandum

To: Regional Directors, Regions 1-7

From: Director **/s/ Jamie Rappaport Clark** SEP 14

Subject: Service Guidance on the Siting, Construction, Operation and Decommissioning of Communications Towers

Construction of communications towers (including radio, television, cellular, and microwave) in the United States has been growing at an exponential rate, increasing at an estimated 6 percent to 8 percent annually. According to the Federal Communication Commission's *2000 Antenna Structure Registry,* the number of lighted towers greater than 199'feet above ground level currently number over 45,000 and the total number of towers over 74,000. By 2003, all television stations must be digital, adding potentially 1,000 new towers exceeding 1,000 feet AGL.

The construction of new towers creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. Communications towers are estimated to kill 4-5 million birds per year, which violates the spirit and the intent of the Migratory Bird Treaty Act and the Code of Federal Regulations at Part 50 designed to implement the MBTA. Some of the species affected are also protected under the Endangered Species Act and Bald and Golden Eagle Act.

Service personnel may become involved in the review of proposed tower sitings and/or in the evaluation of tower impacts on migratory birds through National Environmental Policy Act review; specifically, sections 1501.6, opportunity to be a cooperating agency, and 1503.4, duty to comment on federally-licensed activities for agencies with jurisdiction by law, in this case the MBTA, or because of special expertise. Also, the National Wildlife Refuge System Improvement Act requires that any activity on Refuge lands be determined as compatible with the Refuge system mission and the Refuge purpose(s). In addition, the Service is required by the ESA to assist other Federal agencies in ensuring that any action they authorize, implement, or fund will not jeopardize the continued existence of any federally endangered or threatened species.

A Communication Tower Working Group composed of government agencies, industry, academic researchers and NGO's has been formed to develop and implement a research protocol to determine the best ways to construct and operate towers to prevent bird strikes. Until the research study is completed, or until research efforts uncover significant new mitigation measures, all Service personnel involved in the review of proposed tower sitings and/or the evaluation of the impacts of towers on migratory birds should use the attached interim guidelines when making recommendations to all companies, license applicants, or licensees proposing new tower sitings. These guidelines were developed by Service personnel from research conducted in several eastern, midwestern, and southern States, and have been refined through Regional review. They are based on the best information available at this time, and are the most prudent and effective measures for avoiding bird strikes at towers. We believe that they will provide significant protection for migratory birds pending completion of the Working Group's recommendations. As new information becomes available, the guidelines will be updated accordingly.

Implementation of these guidelines by the communications industry is voluntary, and our recommendations must be balanced with Federal Aviation Administration requirements and local community concerns where necessary. Field offices have discretion in the use of these guidelines on a case by case basis, and may also have additional recommendations to add which are specific to their geographic area.

Also attached is a Tower Site Evaluation Form which may prove useful in evaluating proposed towers and in streamlining the evaluation process. Copies may be provided to consultants or tower companies who regularly submit requests for consultation, as well as to those who submit individual requests that do not contain sufficient information to allow adequate evaluation. This form is for discretionary use, and may be modified as necessary.

The Migratory Bird Treaty Act (16 U.S.C. 703-712) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. While the Act has no provision for allowing an unauthorized take, it must be recognized that some birds may be killed at structures such as communications towers even if all reasonable measures to avoid it are implemented. The Service's Division of Law Enforcement carries out its mission to protect migratory birds not only through investigations and enforcement, but also through fostering relationships with individuals and industries that proactively seek to eliminate their impacts on migratory birds. While it is not possible under the Act to absolve individuals or companies from liability if they follow these recommended guidelines, the Division of Law Enforcement and Department of Justice have used enforcement and prosecutorial discretion in the past regarding individuals or companies who have made good faith efforts to avoid the take of migratory birds.

Please ensure that all field personnel involved in review of FCC licensed communications tower proposals receive copies of this memorandum. Questions regarding this issue should be directed to Dr. Benjamin N. Tuggle, Chief, Division of Habitat Conservation, at (703)358-2161, or

Jon Andrew, Chief, Division of Migratory Bird Management, at (703)358-1714. These guidelines will be incorporated in a Director's Order and placed in the Fish and Wildlife Service Manual at a future date.

Attachment

cc: 3012-MIB-FWS/Directorate Reading File
3012-MIB-FWS/CCU Files
3245-MIB-FWS/AFHC Reading Files
840-ARLSQ-FWS/AF Files
400-ARLSQ-FWS/DHC Files
400-ARLSQ-FWS/DHC/BFA Files
400-ARLSQ-FWS/DHC/BFA Staff
520-ARLSQ-FWS/LE Files
634-ARLSQ-FWS/MBMO Files (Jon Andrew)

FWS/DHCIBFAJRWillis:bg:08/09/00:(703)358-2183
S:\DHC\BFA\WILLIS\COMTOW-2.POL

Attachment

**Service Interim Guidelines For Recommendations On Communications Tower Siting, Construction, Operation, and Decommissioning**

1. Any company/applicant/licensee proposing to construct a new communications tower should be strongly encouraged to collocate the communications equipment on an existing communication tower or other structure (e.g., billboard, water tower, or building mount). Depending on tower load factors, from 6 to 10 providers may collocate on an existing tower.

2. If collocation is not feasible and a new tower or towers are to be constructed, communications service providers should be strongly encouraged to construct towers no more than 199 feet above ground level, using construction techniques which do not require guy wires (e.g., use a lattice structure, monopole, etc.). Such towers should be unlighted if Federal Aviation Administration regulations permit.

3. If constructing multiple towers, providers should consider the cumulative impacts of all of those towers to migratory birds and threatened and endangered species as well as the impacts of each individual tower.

4. If at all possible, new towers should be sited within existing "antenna farms" (clusters of towers). Towers should not be sited in or near wetlands, other known bird concentration areas (e.g., State or Federal refuges, staging areas, rookeries), in known migratory or daily movement flyways, or in habitat of threatened or endangered species. Towers should not be sited in areas with a high incidence of fog, mist, and low ceilings.

5. If taller (>199 feet AGL) towers requiring lights for aviation safety must be constructed, the minimum amount of pilot warning and obstruction avoidance lighting required by the FAA should be used. Unless otherwise required by the FAA, only white (preferable) or red strobe lights should be used at night, and these should be the minimum number, minimum intensity, and minimum number of flashes per minute (longest duration between flashes) allowable by the FAA. The use of solid red or pulsating red warning lights at night should be avoided. Current research indicates that solid or pulsating (beacon) red lights attract night-migrating birds at a much higher rate than white strobe lights. Red strobe lights have not yet been studied.

6. Tower designs using guy wires for support which are proposed to be located in known raptor or waterbird concentration areas or daily movement routes, or in major diurnal migratory bird movement routes or stopover sites, should have daytime visual markers on the wires to prevent collisions by these diurnally moving species. (For guidance on markers, see *Avian Power Line Interaction Committee (APLIC).* 1994. *Mitigating Bird Collisions with Power Lines: The State of the Art in* 1994. *Edison Electric Institute, Washington, D.c., 78pp,* and *Avian Power Line Interaction Committee (APLIC).* 1996. *Suggested Practices/or Raptor Protection on Power Lines. Edison Electric InstituteiRaptor Research Foundation, Washington, D. C; 128pp.* Copies can be obtained via the Internet at http://www.eei.org/resources/pubcat/enviro/. or by calling 1-800/334-5453).

7. Towers and appendant facilities should be sited, designed and constructed so as to avoid or minimize habitat loss within and adjacent to the tower "footprint." However, a larger tower footprint is preferable to the use of guy wires in construction. Road access and fencing should be minimized to reduce or prevent habitat fragmentation and disturbance, and to reduce above ground obstacles to birds in flight.

8. If significant numbers of breeding, feeding, or roosting birds are known to habitually use the proposed tower construction area, relocation to an alternate site should be recommended. If this is not an option, seasonal restrictions on construction may be advisable in order to avoid disturbance during periods of high bird activity.

9. In order to reduce the number of towers needed in the future, providers should be encouraged to design new towers structurally and electrically to accommodate the applicant/licensee's antennas and comparable antennas for at least two additional users (minimum of three users for each tower structure), unless this design would require the addition of lights or guy wires to an otherwise unlighted and/or unguyed tower.

10. Security lighting for on-ground facilities and equipment should be down-shielded to keep light within the boundaries of the site.

11. If a tower is constructed or proposed for construction, Service personnel or researchers from the Communication Tower Working Group should be allowed access to the site to evaluate bird use, conduct dead-bird searches, to place net catchments below the towers but above the ground, and to place radar, Global Positioning System, infrared, thermal imagery, and acoustical monitoring equipment as necessary to assess and verify bird movements and to gain information on the impacts of various tower sizes, configurations, and lighting systems.

12. Towers no longer in use or determined to be obsolete should be removed within 12 months of cessation of use.

In order to obtain information on the extent to which these guidelines are being implemented, and to identify any recurring problems with their implementation which may necessitate modifications, letters provided in response to requests for evaluation of proposed towers should contain the following request:

> "In order to obtain information on the usefulness of these guidelines in preventing bird strikes, and to identify any recurring problems with their implementation which may necessitate modifications, please advise us of the final location and specifications of the proposed tower, and which of the measures recommended for the protection of migratory birds were implemented. If any of the recommended measures can not be implemented, please explain why they were not feasible."

AMENDED IN ASSEMBLY APRIL 13, 2011

AMENDED IN ASSEMBLY MARCH 31, 2011

CALIFORNIA LEGISLATURE—2011–12 REGULAR SESSION

# ASSEMBLY BILL No. 511

**Introduced by Assembly Member Yamada**

February 15, 2011

An act to add Section 21417 to the Public Utilities Code, relating to aviation.

LEGISLATIVE COUNSEL'S DIGEST

AB 511, as amended, Yamada. Aeronautics: ~~anemometer~~ *meteorological* towers.

(1) Existing law, the State Aeronautics Act, governs aeronautics in this state. One of the purposes of the act is to further and protect the public interest in aeronautics and aeronautical progress by fostering and promoting safety in aeronautics.

This bill would require ~~an anemometer~~ *a meteorological* tower, as defined, to be marked as prescribed.

Because any violation of the State Aeronautics Act is a crime and the provisions of the bill would be within the act, this bill would impose a state-mandated local program by creating a new crime.

(2) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: yes.

*The people of the State of California do enact as follows:*

SECTION 1. Section 21417 is added to the Public Utilities Code, to read:

21417. (a) As used in this section, the following terms have the following meanings:

(1) ~~"Anemometer"~~ *"Meteorological instrument"* means an instrument for measuring and recording the speed of the wind.

(2) ~~"Anemometer~~ *"Meteorological* tower" means a structure, including all guy wires and accessory facilities, on which ~~an anemometer~~ *a meteorological instrument* is mounted for the purposes of documenting whether a site has wind resources sufficient for the operation of a wind turbine generator.

(b) ~~An anemometer tower~~ *A meteorological tower below 200 feet in height and above 50 feet in height* shall be marked as follows:

(1) The ~~top one-half of the anemometer~~ *full length of the meteorological* tower shall be painted ~~in~~ *seven* equal, alternating bands of aviation orange and white, beginning with orange at the top of the tower and ending with orange at the bottom of the marked portion of the tower.

(2) Two marker balls shall be attached to and evenly spaced on each of the outside guy wires.

(3) The area surrounding each point where a guy wire is anchored to the ground shall have a contrasting appearance with any surrounding vegetation. If the adjacent land is grazed, the area surrounding the anchor point shall be fenced. For the purposes of this paragraph, "area surrounding the anchor point" means an area not less than 64 square feet whose outer boundary is at least four feet from the anchor point.

(4) One or more seven-foot safety sleeves shall be placed at each anchor point and shall extend from the anchor point along each guy wire attached to the anchor point.

*(5) A red flashing obstruction light shall be affixed to the highest point on the tower and operate continuously, or at a minimum, when the northern sky illuminance reaching a vertical surface falls below 35 foot-candles (367.7 lux).*

SEC. 2. No reimbursement is required by this act pursuant to Section 6 of Article XIIIB of the California Constitution because the only costs that may be incurred by a local agency or school

district will be incurred because this act creates a new crime or infraction, eliminates a crime or infraction, or changes the penalty for a crime or infraction, within the meaning of Section 17556 of the Government Code, or changes the definition of a crime within the meaning of Section 6 of Article XIII B of the California Constitution.

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APPENDIX C

[Federal Register: January 5, 2011 (Volume 76, Number 3)]
[Proposed Rules]
[Page 490-491]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr05ja11-25]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 77

[Docket No: FAA 2010-1326]

# Marking Meteorological Evaluation Towers

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Proposed revision to Advisory Circular; request for comments.

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SUMMARY: The FAA is considering revising its current Advisory Circular on Obstruction Marking and Lighting to include guidance for Meteorological Evaluation Towers (METs). These towers are erected in remote and rural areas, often are less than 200 feet above ground level (AGL), and fall outside of FAA regulations governing tall structures and their impact on navigable airspace. The proposed marking guidance would enhance the conspicuity of the towers and address the safety related concerns of low level agricultural operations. The FAA seeks comment on the proposed guidance.

DATES: Comments must be received on or before February 4, 2011.

ADDRESSES: You may send comments identified by docket number FAA 2010-1326 using any of the following methods:

Federal eRulemaking Portal: Go to http://www.regulations.gov and follow the online instructions for sending your comments electronically.

Mail: Send Comments to Docket Operations, M-30; U.S. Department of Transportation, 1200 New Jersey Avenue, SE., West Building Ground Floor, Room W12-140, West Building Ground Floor, Washington, DC 20590-0001.

Hand Delivery: Take comments to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Fax: (202) 493-2251.

FOR FURTHER INFORMATION CONTACT: Sheri Edgett-Barron, Obstruction Evaluation Services, Air Traffic Organization, AJV-15, Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591; telephone: (202) 267-8783; e-mail: sheri.edgett-baron@faa.gov.

SUPPLEMENTARY INFORMATION:

14 CFR Part 77

Title 49 of the United States Code (U.S.C.), section 40103(a)(1), provides that the ``United States Government has exclusive sovereignty of airspace of the United States.'' Paragraph (b) of this section directs the FAA to ``develop plans and policy for the use of the navigable airspace and assign by regulation or order the use of the airspace necessary to ensure the safety of aircraft and the efficient use of the airspace.''

In recognition of the threat tall structures can pose to aviation safety, 49 U.S.C. 44718 directed the FAA to promulgate regulations requiring notice of proposed structures or alterations of existing structures when the notice will promote safety in air commerce and the efficient use and preservation of the navigable airspace and of airport traffic capacity at public-use airports. (14 CFR part 77.) The agency was further directed to study such structures and determine the extent of any adverse impacts on the safe and efficient use of the airspace, facilities or equipment.

[[Page 491]]

Consistent with the above statutory and regulatory framework, the FAA has adopted policy to establish the standards for which the FAA identifies ``obstructions'' and ``hazards'' in the navigable airspace in furtherance of its responsibilities to manage the navigable airspace safely and efficiently. See 14 CFR part 77, and FAA Order 7400.2, Procedures for Handling Airspace Matters. The FAA issues a determination advising whether the structure would be a hazard to air navigation. The FAA may condition its determination of no hazard with the structure appropriately being marked and lighted, as specified in the determination. FAA criteria for marking and lighting of tall structures are found in Advisory Circular No. 70/7460-1, Obstruction Marking and Lighting.

Unless within the vicinity of an airport,\1\ proponents of new structures or alterations of existing structures must file notice with the FAA for ``any construction or alteration of more than 200 feet in height above the ground level at its site.'' 14 CFR 77.13(a)(1). Consequently, as the FAA does not study these structures there is no FAA determination that would specify the marking of these structures.

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\1\ 14 CFR 77.13(a), paragraphs (2), (3), (4) and (5) are not relevant to this issue.

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Background

The emphasis to discover sources of renewable energy in the United States has prompted individuals and companies to explore all means of energy generation. Wind energy, converted into electrical energy by wind turbines, is widely pursued as a viable alternative. In order to determine if a site meets requirements to construct a wind turbine or wind farm, companies erect METs. These towers are used to gather wind data necessary for site evaluation and development of wind energy projects. The data generally is gathered over a year to ascertain if the targeted area represents a potential location for the installation of wind turbines.

Requirements to file notice under part 77 generally do not apply to structures at heights lower than 200 feet AGL unless close to an airport environment. Therefore, the FAA does not have a database of MET locations, nor does it conduct an aeronautical study to determine

whether the particular structure would be hazardous to aviation. These towers are often installed in remote or rural areas, just under 200 feet above ground level (AGL), usually at 198 feet or less. These structures are portable, erected in a matter of hours, installed with guyed wires and constructed from a galvanized material often making them difficult to see in certain atmospheric conditions.

While the METs described above are not subject to the provisions of part 77 and therefore, the FAA does not conduct aeronautical studies to determine whether these structures are obstructions and adversely impact air navigation, the FAA does acknowledge that these towers under certain conditions may be difficult to see by low-level agricultural flights operating under visual flight rules. The color, portability of these towers, their placement in rural and remote areas, and their ability to be erected quickly are factors that pilots should be aware of when conducting operations in these areas.

The FAA has received complaints and inquiries from agricultural operations in remote or rural areas regarding the safety impacts of these towers on low-level agricultural operations. In addition, representatives from the National Agricultural Aviation Association (NAAA) met with the FAA on November 16, 2010 to discuss safety specific concerns of the aerial application industry. The NAAA suggested safety guidelines and marking and lighting criteria in order to reduce the risks for aerial applications. A copy of the material provided by NAAA has been placed in the docket.

Proposed Guidance

The FAA is considering revising AC No. 70/7460-1, Obstruction Marking and Lighting, to include guidance for the voluntary marking of METs that are less than 200 feet AGL. The FAA recognizes the need to enhance the conspicuity of these METs, particularly for low-level agricultural operations and seeks public comment on the guidance provided below.

The FAA recommends that the towers be painted in accordance to the marking criteria contained in Chapter 3, paragraphs 30-33 of AC No. 70/7460-1. In particular, we reference paragraph 33(d), which discusses alternate bands of aviation orange and white paint for skeletal framework of storage tanks and similar structures, and towers that have cables attached. The FAA also recommends spherical and/or flag markers be used in addition to aviation orange and white paint when additional conspicuity is necessary. Markers should be installed and displayed according to the existing standards contained in Chapter 3, paragraph 34 of AC No. 70/70460-1.

The FAA is also considering recommending high visibility sleeves on the outer guy wires of these METs. While the current Obstruction Marking and Lighting Advisory Circular does not contain such guidance for high visibility sleeves, the FAA specifically seeks comments on this recommendation.

The FAA anticipates that a uniform and consistent scheme for voluntarily marking these METs would enhance safety by making these towers more readily identifiable for agricultural operations.

Issued in Washington, DC, on December 29, 2010.
Edith V. Parish,
Manager, Airspace, Regulations and ATC Procedures Group.
[FR Doc. 2010-33310 Filed 1-4-11; 8:45 am]
BILLING CODE 4910-13-P

# APPENDIX D

**Pioneer Green Energy**
**Biological Survey Report for a Meteorological Tower Site in Yolo County, CA**

Prepared for:
Pioneer Green Energy, LLC
1802, Suite 200
Austin, TX 78701

Prepared by:
Stantec Consulting Services Inc.
8735 Atherton Road
Rocklin, CA 95765
916-773-8100

**May 2011**

## Introduction

Pioneer Green Energy, LLC (Pioneer) is evaluating a potential Meterological Tower (Met Tower) sites within their Dunnigan Area of interest for wind energy development within western Yolo County, CA (see attached Figure showing location of eastern most Met Tower). As part of the CEQA compliance process to cover the installation of proposed Met towers, Yolo County, the lead agency for CEQA, has requested that reconnaissance-level biological field surveys be conducted. This report outlines the results of that biological survey.

## REGULATORY OVERVIEW

### Federal Endangered Species Act (ESA)

The US Fish and Wildlife Service (USFWS) has jurisdiction over species listed as threatened or endangered under Section 9 of the ESA. The act protects listed species from harm or *take* which is broadly defined as "...the action of harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct." For any project involving a federal agency in which a listed species could be affected, the federal agency must consult with the USFWS in accordance with Section 7 of the ESA. The USFWS issues a biological opinion and, if the project does not jeopardize the continued existence of the listed species, issues an incidental-take permit.

### Migratory Bird Treaty Act and Bald and Gold Eagle Protection Act

The Migratory Bird Treaty Act (MBTA, 16 United States Code Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668) protect certain species of birds from direct take. The MBTA protects migrant bird species from take through setting hunting limits and seasons and protecting occupied nests and eggs. The Bald and Gold Eagle Protection act prohibits the take or commerce of any part of these species. The USFWS administers both Acts and reviews federal agency actions that may affect species protected by the Acts.

### Section 404 of the Federal Clean Water Act (CWA)

The United States Army Corps of Engineers (Corps) and the Environmental Protection Agency (EPA) regulate the discharge of dredge or fill material into waters of the United States under Section 404 of the CWA ("waters of the United States" include wetlands and lakes, rivers, streams, and their tributaries). Wetlands are defined for regulatory purposes as areas "...inundated or saturated by surface or ground water 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" (333

CFR 328.3, 40 CFR 230.3). Project proponents must obtain a permit from the Corps for all discharges of fill material into waters of the United States, including wetlands, before proceeding with a proposed action.

**State Regulations**

**California Endangered Species Act**

The California Department of Fish and Game (CDFG) has jurisdiction over species listed as threatened or endangered under section 2080 of the California Fish and Game Code. The California Endangered Species Act (CESA) prohibits take of state-listed threatened and endangered species. The state Act differs from the federal Act in that it does not include habitat destruction in its definition of *take*. The California Fish and Game Code defines take as "hunt, pursue, catch, capture, or kill, or attempt to hunt pursue, catch, capture, or kill." The CDFG may authorize take under the CESA through Sections 2081 agreements. If the results of a biological survey indicate that a state-listed species would be affected by the project, the CDFG would issue an Agreement under Section 2081 of the CDFG Code and would establish a Memorandum of Understanding for the protection of state-listed species.

CDFG maintains lists for Candidate-Endangered Species and Candidate-Threatened Species/ California candidate species are afforded the same level of protection as listed species. California also designates Species of Special Concern, which are species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational 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.

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

Sections 3503, 3503.5, and 3800 of the California Department of Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs. Implementation of the take provisions requires that project-related disturbance at active nesting territories be reduced or eliminated during critical phases of the nesting cycle (March 1 – August 15). 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 the birds depend is considered "taking" and is potentially punishable by fines and/or imprisonment. Such taking would also violate federal law protecting migratory birds (e.g. Migratory Bird Treaty Act above).

**Natural Communities Conservation Act**

The Natural Communities Conservation Act of 1991 was intended to provide an alternative and/or a collaborative approach to FESA and CESA. It was designed to

represent a new approach to conservation. Instead of focusing on individual species (e.g., FESA/CESA), the NCCA focuses on protecting intact ecosystems across an entire region or landscape. NCCPs have become increasingly common in the development of regional plans that combine the HCP and NCCP processes.

## Local Regulations and Programs

### Yolo County General Plan

Goals Policies and Implementation Programs in Conservation and Open Space Element that would pertain to the installation of the Met Towers.

**Policy CO-2.9** Protect riparian areas to maintain and balance wildlife values.

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

**Policy CO-2.14** Ensure no net loss of oak woodlands, alkali sinks, rare soils, vernal pools or geological substrates that support rare endemic species, with the following exception. The limited loss of blue oak woodland and grasslands may be acceptable, where the fragmentation of large forests exceeding 10 acres is avoided, and where losses are mitigated.

**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.

### Habitat Conservation Plan/Natural Communities Conservation Plan

The 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 threatened Swainson's hawk.

**Study Methods**

Prior to conducting reconnaissance-level biological resource survey of the proposed Met Tower location in Yolo County, Stantec conducted a desktop analysis of the area to evaluate the potential for special-status species to occur within the proposed site and access to the site. Sensitive and protected habitats such as vernal pools, streams, and wetlands were assessed, as well as special-status plants and trees for potential raptor nesting.

On May 4, 2011, Stantec biologist Amy Croft conducted a reconnaissance-level biological survey of the proposed Met Tower location. A thorough survey was completed to identify habitats within the Met Tower location and along proposed access to the site. Each habitat was examined and photos were taken in each direction from the proposed Met Tower location.

**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. Little Blue Ridge is the northwestern corner of the County (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).

The setting of the proposed Met Tower location includes an annual grassland on rolling hills (see photos below).

Non-native grasses and forbs dominate these areas and include non-native wild oat (*Avena* spp.), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeacus*), barleys (*Hordeum* spp.) and nonnative forbs.

## Survey Results

### Met Tower - Eastern Location on Attached Figure

The topography of the eastern met tower consisted of annual grassland and rolling hills. The habitat consisted of non-native grasses and forbs including non-native wild oat (*Avena* spp.), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeacus*), barleys (*Hordeum* spp.) and nonnative forbs. No sensitive habitat including vernal pools, streams or wetlands, or trees were located within the vicinity of the proposed Met Tower location. No burrows were identified (habitat for burrowing owls) during the survey.

Photos from the proposed Met Tower location are included below.

Photo 1: Looking East from Eastern Parcel

Photo 2: Looking North from Eastern Parcel

Photo 3: Looking South from Eastern Parcel

Photo 4: Looking West from Eastern Parcel

**Potential Impacts**

The proposed Met Tower my include lighting that will be required by Yolo County. If the Met Tower does contain the required lighting by Yolo County, the proposed Met Tower would include a top-mounted, upward facing, medium intensity flashing red light. Potential biological impacts from the addition of this light on the Met Tower could include attracting nocturnal avian species, such as owls, and bats near the lights. However, attraction of these nocturnal flying avian and bat species would not pose an impact to those species by itself, but an impact could occur if one of these nocturnal species were to either collide with the Met Tower and/or collide with an associated wind sensor mounted on the Met Tower.

The probability of a bat or nocturnal avian species colliding with the Met Tower in any way is considered very low. The Met Tower will not have any large moving parts that could harm any nocturnal bat or avian species and the wind sensors to be mounted on the Met Tower are very small. Bats use echolocation to avoid structures and fly normally while pursuing prey and moving to and from roosting sites. Nocturnal avian species that could be attracted to the lights, such as owls, would have an easy time avoiding wind sensors and the structures themselves. However, the likelihood of an owl being attracted to an upward facing, flashing red light is very low to nil. Therefore, the potential impact from lighting on this Met Tower, if required by Yolo County, in relation to potential impacts to bats and avian nocturnal species is considered very low and no impact to these species are likely to occur.

There were no wetlands, streams, vernal pools, or migratory bird or raptor nesting habitat in the area so these resources will not be impacted by the proposed project. The Met Tower location did not contain nesting habitat for Swainson's hawk, burrowing owl, or white-tailed kite. No elderberry shrubs or trees were located in the proposed project area so there is no potential habitat for the valley elderberry longhorn beetle (VELB) in the proposed project area and thus this species would not be impacted by the project.

**Conclusions**

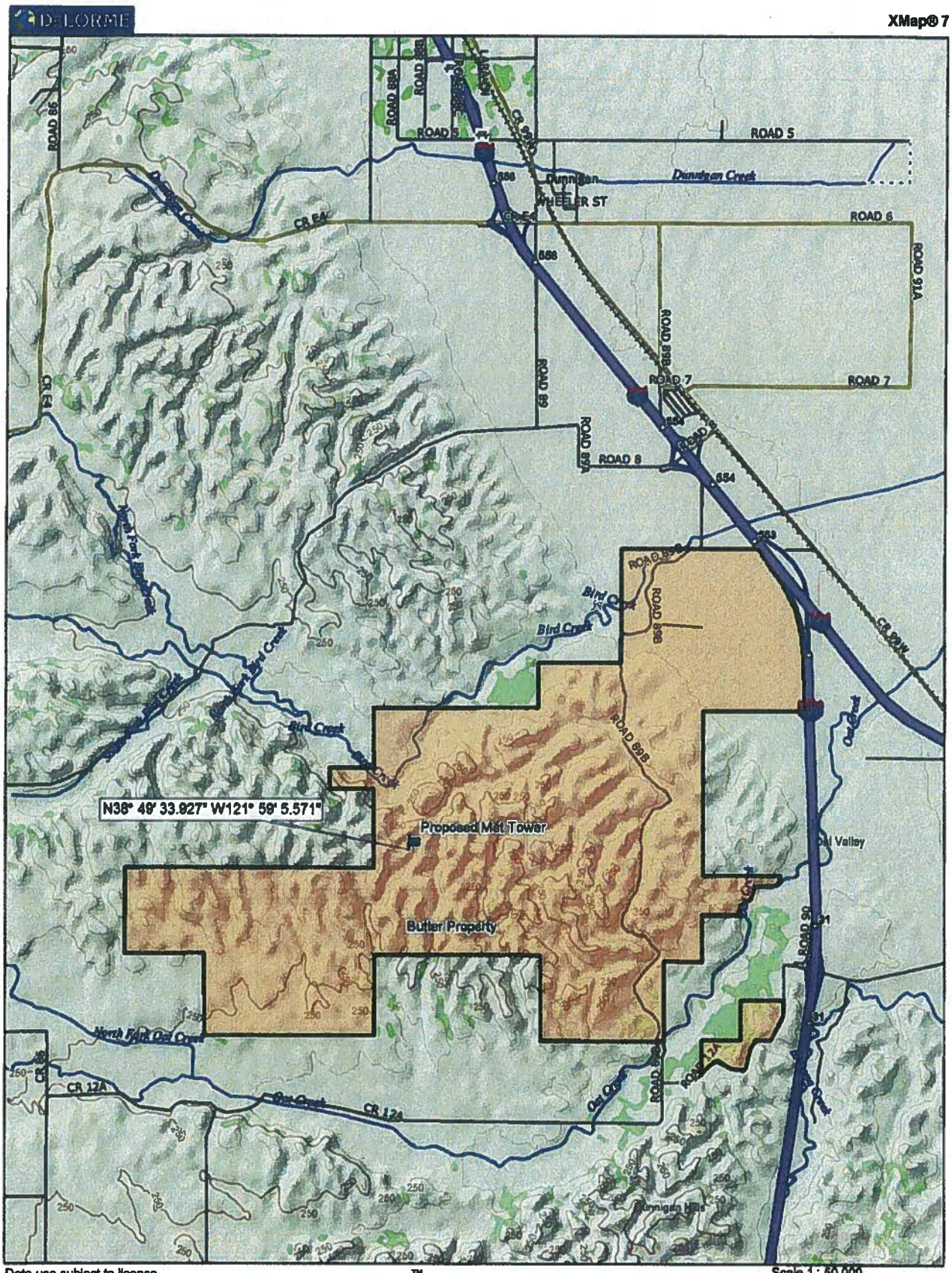
There are no significant biological impacts that will occur from the construction and operation of the proposed Met Tower. No sensitive habitat including vernal pools, burrows, wetlands or streams, or trees are within close proximity to the Met Tower location.

## References

California Department of Fish and Game (CDFG). 2011. California Natural Diversity Database (CNDDB), Wildlife and Habitat Data Analysis Branch, Rarefind Version 3.1.1. Updated 4/1/2011.

California Native Plant Society (CNPS). 2011. Inventory of Rare and Endangered Plants (Online). California Native Plant Society, Sacramento, CA. Accessed April 25, 2011 at http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi

County of Yolo. 2009. Yolo County 2030 Countywide General Plan. http://www.yolocounty.org/Index.aspx?page=1965

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www.delorme.com

TM

MN (14.4°E)

Scale 1 : 50,000

1" = 4,166.7 ft

Data Zoom 12-0

# APPENDIX E


**Legend**

▲ Met Mast

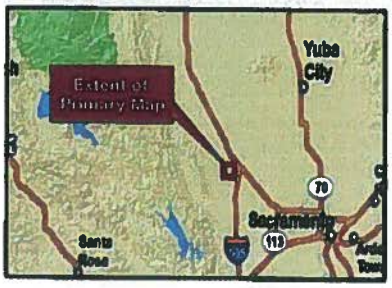
1-mile Buffer

*There are no documented occurences of special status species within 1-mile of the proposed met mast locations (CNDDB 2011)

**CNDDB Occurences within Dunnigan AOI**

1:24,000

0 0.25 0.5 Miles



# FINDINGS
# PIONEER GREEN ENERGY METEOROLOGICAL TOWER USE PERMIT
# ZONE FILE #2011-006

Upon due consideration of the facts presented in this staff report and at the public hearing for Zone File #2011-006, the Yolo County Planning Commission finds the following:
*(A summary of evidence to support each FINDING is shown in Italics)*

**California Environmental Quality Act (CEQA) and Guidelines**

That the recommended Negative Declaration/Initial Study was prepared in accordance with the California Environmental Quality Act (CEQA) and is the appropriate environmental document and level of review for this project.

*The environmental document for the project, prepared pursuant to Section 15000 et. seq. of the CEQA Guidelines, provides the necessary proportionate level of analysis for the proposed project, and sufficient information to reasonably ascertain the project's potential environmental effects. The environmental review process has concluded that there will not be a significant effect on the environment as a result of the proposed project.*

**General Plan**

That the proposal is consistent with the Yolo County General Plan as follows:

*The Yolo County General Plan designates the subject property as Agriculture (AG).*

*The project is consistent with the following General Plan Policies:*

*Community Character Policy CC-1.18: Electric towers, solar power facilities, wind power facilities, communication transmission facilities and/or above ground lines shall be avoided along scenic roadways and routes, to the maximum feasible extent.*

*Community Character Policy CC-4.1: Reduce dependence upon fossil fuels, extracted underground metals, minerals and other non-renewable resources.*

*Community Character Policy CC-4.5: Encourage individual and community-based wind and solar energy systems.*

*Conservation Policy CO-7.1: Encourage conservation of natural gas, oil and electricity, and management of peak loads in existing land uses.*

**Zoning**

That the proposal is consistent with the property's zoning.

*The property is zoned A-P (Agricultural Preserve). The proposed use is consistent with Section 8-2.2418 of the Yolo County Code, which regulates the placement of wind energy structures.*

# ATTACHMENT D

That, as required by Section 8-2.2418.4(3) it is found that the proposed use shall require a Use Permit.

*Although meteorological towers (Met Towers), themselves, are not wind generating turbines, they are the precursors to a potential wind energy generation project, and thus, subject to the requirements of the County's Wind Ordinance. Met Towers do not generate energy, nor do they produce any noise or other nuisances, but they can impose on aesthetic resources if located near a scenic vista or in a populated rural setting. They are generally temporary in nature, and to minimize cost and ground disturbance, are anchored with guy wires. Guy-wired towers, such as radio towers, communication towers, etc., present a potential impact to navigable airspace and avian species.*

*In order to address the potential impacts of installing a nearly 200-foot tower anchored with guy wires, the project's Conditions of Approval require recommendations made by the National Agricultural Aviation Association for increasing visibility to aircraft pilots, and include conditions that require bird flight diverters and a bird monitoring plan for minimizing collision risk.*

That the proposal is consistent with findings required for approval of a Use Permit (Section 8-2.2804 of the Yolo County Code) as follows:

The requested land use is listed as a permitted use in the zoning regulations.

*Pursuant to Section 8-2.2418(3) the proposed Met Tower is allowed within the A-P Zone through the Major Use Permit review and approval process.*

The request is essential or desirable to the public comfort and convenience.

*The project is essentially an information gathering effort in which meteorological towers are installed temporarily to collect wind data to assess the potential for a future wind energy generation project. State and federal legislation require local jurisdictions to address the promotion of greenhouse gas emission (GHG) reduction, which is consistent with policies in the Yolo County 2030 Countywide General Plan and Climate Action Plan that call from measurable reductions in GHGs through enhanced reliance on renewable and sustainable energy sources.*

The requested land use will not impair the integrity or character of a neighborhood or be detrimental to public health, safety or general welfare.

*As evidenced in the Initial Study/Negative Declaration, the proposed project will not create a significant effect on the character of the surrounding rural area. The project is located on a portion of a 635-acre parcel, which is part of a larger 3,800-acre ranch property located in the Dunnigan Hills. The property and greater surrounding vicinity are currently in use as rangeland, and the terrain consists of rolling hills. The project proposes very little ground disturbance and the tower will be placed temporarily, no longer than three years as conditioned. Very little to no vegetation is required to be removed for installation of the temporary tower, and thus there will be negligible loss of rangeland. The closest rural residence is located approximately 1.6 miles northwest of the project. Conditions of Approval placed on the project, such as the requirement for aviation marking and installation of bird flight diverters, will ensure that the public's health, safety, or general welfare will not be impaired.*

Adequate utilities, access roads, drainage, sanitation, and/or other necessary facilities will be provided.

*All necessary infrastructure and utilities will be required of the proposed project. Existing roadways and internal farm roads will serve the project. No other utilities are required for the temporary placement of the Met Tower.*

The requested use will serve and support production of agriculture, the agricultural industry, animal husbandry or medicine; or is agriculturally related and not appropriate for location within a city or town; and the requested use, if proposed on prime soils, cannot be reasonably located on lands containing non-prime soils.

*Met Towers are typically located in rural, remote areas, away from urban centers. The proposed location is on property used as rangeland in the higher elevations of the southwestern portion of the County. Due to the topography of the Dunnigan Hills there are no rural residences within the vicinity of the project, and very little to no grazing land will be taken out of production with the installation of the temporary tower.*

Adequate utilities, access roads, drainage, sanitation, and/or other necessary facilities will be provided.

*All necessary infrastructure and utilities will be required of the proposed project. Existing roadways and internal farm roads will serve the project. No other utilities are required for the temporary placement of the Met Tower.*

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*Met Towers are typically located in rural, remote areas, away from urban centers. The proposed location is on property used as rangeland in the higher elevations of the southwestern portion of the County. Due to the topography of the Dunnigan Hills there are no rural residences within the vicinity of the project, and very little to no grazing land will be taken out of production with the installation of the temporary tower.*

# CONDITIONS OF APPROVAL
# PIONEER GREEN ENERGY METEOROLOGICAL TOWER
# USE PERMIT
# ZONE FILE #2011-006

**ON-GOING OR OPERATIONAL CONDITIONS OF APPROVAL:**

PLANNING DIVISION - PPW (530) 666-8036

1. The project shall be developed in compliance with all adopted Conditions of Approval approved for Zone File #2011-006. The applicant shall be responsible for all costs associated with implementing the Conditions of Approval as contained herein.

2. Development of the site, including installation and/or placement of structures, shall be as described in this staff report for this Use Permit (ZF #2011-006). Installation of one temporary meteorological tower shall be limited to the specific area of the property as shown in **Attachment A.** The Met Tower shall include the following components: a three-foot by three-foot base plate; one galvanized steel tower measuring 197-feet in height and between eight and ten inches in diameter; four sets of guy wires (six guy wires per set, for a total of 24 guy wires); six anemometers and two wind vanes; a small box affixed to the tower containing logging/transmitting electronics; and a small solar panel and battery pack affixed to the tower. No permanent concrete foundation shall be used for the base.

3. Any minor modification or expansion of the proposed use shall be consistent with the purpose and intent of this Use Permit, and shall be approved through Site Plan Review or an amendment to this Use Permit, as determined by the Director of Planning and Public Works. The site shall be operated in a manner consistent with the project's approval.

4. This Use Permit shall commence within one year from the date of the Planning Commission's approval or said permit shall be null and void. The Use Permit shall expire after 36 months (three years) from the date of project approval. However, through a Use Permit Amendment, the Planning Commission may grant an extension of time if the request for a time extension is found to be consistent with the intent of the original approval.

5. Assessment of fees under Public Resources Code Section 21089, and as defined by Fish and Game Code Section 711.4 will be required. The fees ($2,044 plus a $50 Recorder fee) are payable by the project applicant upon filing of the Notice of Determination by the lead agency, within five working days of approval of this project by the Planning Commission.

# ATTACHMENT E

6. The project is required to comply with recommendations from the National Agricultural Aviation Association (as modified to fit site specific conditions) for increasing visibility to aircraft pilots. The following measures shall be included in the design of the tower:
    - The tower must be painted in seven (7) equal, alternating bands of aviation orange and white, beginning with orange on the top of the tower, and ending with orange at the base.
    - The tower must have a flashing red light at the top of the tower with a minimum of 3.75km visibility when flashing.
    - Six (6) feet around the tower base plate and six (6) feet past the outer anchors shall be mowed once every three months (after completion of each monitoring site survey, as described in Condition of Approval #8) so that the vegetation is of a different height from the vegetation surrounding the tower.
    - The guy-wired tower must have a total of eight (8) marker balls attached as follows: four (4) marker balls attached to the guide wires at the top of the tower at a distance no further down than 15 feet from the top wire connection to the tower; and four (4) marker balls at the bottom of the guide wires at a height of five (5) to ten (10) feet above the tallest crop to be grown in the immediate vicinity of the tower.
    - The guy-wired tower must have a 7-foot safety sleeve at each anchor point, plus one (1) sleeve located six (6) feet outside the outside anchor, and one (1) sleeve at the lift anchor.

7. The area surrounding each anchor point shall be fenced.

8. The applicant shall submit a Biological Monitoring Program to the Planning and Public Works Department for approval prior to the issuance of any building or grading permits. The Program shall include quarterly (every three months) monitoring of the project site for three years (or the life of the project) by a qualified biologist hired by the applicant. The purpose of the monitoring is to document the presence of any avian carcasses near the base of the Met Tower(s), to determine if any bird strikes with the guy wires have occurred. A report shall be prepared by the consultant documenting the results of the monitoring and shall be submitted to the Planning and Public Works Department and the appropriate office of the U.S. Fish and Wildlife Service, following each quarterly monitoring session.

9. In order to minimize impacts to birds and bats, the applicant will be required to install daytime visual markers (bird flight diverters) on the outermost and innermost guy wires (of each set) to prevent collisions for diurnally moving species. The bird flight diverters should span the length of the guy wires at intervals of not greater than 15 feet.

10. The applicant shall keep the designated leasehold area (site) free from flammable brush, grass, and weeds.

11. Except for a single red-flashing aviation warning light installed on the top of the tower, no exterior lighting shall be provided as part of this project.

12. The project shall be operated in compliance with all applicable federal and state laws, including Yolo County Code regulations and FAA standards regulating tower heights and aviation safety procedures.

13. The meteorological tower shall be removed and the project site restored back to its original condition within thirty (30) days of cessation of use.

ENVIRONMENTAL HEALTH DIVISION - (530) 666-8646

14. The applicant shall submit a hazardous materials business plan and inventory for review and approval by Yolo County Environmental Health Division by the time hazardous materials and/or hazardous wastes are present in reportable quantities on-site, at the facility. Reportable quantities are amounts of hazardous materials that equal or exceed 500 pounds, 55 gallons, 200 cubic feet of gas, or any quantity of hazardous waste.

COUNTY COUNSEL - (530) 666-8172

15. In accordance with Yolo County Code Section 8-2.2415, the applicant shall agree to indemnify, defend, and hold harmless the county or its agents, officers and employees from any claim, action, or proceeding (including damage, attorney fees, and court cost awards) against the County or its agents, officers, or employees to attach, set aside, void, or annul an approval of the county, advisory agency, appeal board, or legislative body concerning the permit or entitlement when such action is brought within the applicable statute of limitations.

    The county shall promptly notify the applicant of any claim, action or proceeding and that the county cooperates fully in the defense. If the county fails to promptly notify the applicant of any claim, action, or proceeding, or if the county fails to cooperate fully in the defense, the applicant shall not thereafter be responsible to defend, indemnify, or hold the county harmless as to that action.

    The county may require that the applicant post a bond in an amount determined to be sufficient to satisfy the above indemnification and defense obligation.

16. Failure to comply with the Conditions of Approval as approved by the Yolo County Planning Commission may result in the following actions:
    - non-issuance of future building permits;
    - legal action.

**PRIOR TO LAND DISTURBANCE OR ISSUANCE OF BUILDING PERMITS:**

PLANNING DIVISION—PPW (530) 666-8036

17. Construction details shall be included in construction drawings, submitted concurrent with the building permit application, and are subject to review and approval by the Director of the Planning and Public Works Department.

18. During construction, all disturbed soils and unpaved roads shall be adequately watered to keep soil moist to provide dust control, and comply with YSAQMD requirements listed below

19. Submit verification from the lighting manufacturer that the red light operates with the longest allowable off-phase.

20. Applicant shall notify all agricultural aircraft sprayers that are registered with the Yolo County Agricultural Commissioner of the exact location of the approved Met Tower (list may be obtained from the Agricultural Commissioner). This correspondence shall include the longitude and latitude of the tower location, an aerial photograph of the tower location, and a general vicinity map. Applicant shall provide a signed statement that this condition has been satisfied, along with a copy of the mailing list, to the Planning Division.

21. The applicant shall be required to address the potential loss of Swainson's hawk habitat through participation in the Draft Yolo County Habitat Conservation Plan (Yolo County Natural Heritage Program). The applicant shall either: 1) pay a Swainson's hawk mitigation fee for the area disturbed by development, which is estimated not to exceed 1.25 acres (footprint of the area encompassed by guy wires); 2) implement another project specific mitigation plan which is deemed appropriate to the California Department of Fish and Game; or 3) submit written documentation from the California Department of Fish and Game that relieves the applicant from mitigation due to the temporary nature of the project. The fee is currently set at $8,660 per acre and is subject to change. In the event that the final HCP/NCCP is adopted before development occurs, the applicant shall participate in the Final HCP/NCCP to mitigate for the loss of Swainson's hawk habitat.

22. Prior to the issuance of building permits, the property owner shall submit a signed document granting Yolo County, or contractor hired by Yolo County, access to the project site to remove the tower in the event that the applicant fails to remove the tower in accordance with the limits set forth in Condition of Approval #4 and #13. In the event the applicant fails to remove the tower in accordance with these conditions, it shall be liable to County for all costs associated with the removal of the tower.

PUBLIC WORKS DIVISION - PPW (530) 666-8811

23. Construction disturbance of one acre or more shall require a Storm Water Pollution Prevention Plan (SWPPP).

BUILDING DIVISION - PPW (530) 666-8775

24. All building plans shall be submitted to the Planning and Public Works Department for review and approval in accordance with County Building Standards prior to the commencement of any construction.

25. If applicable, the applicant shall obtain the necessary building permits prior to installation of equipment. New installation shall meet State of California minimum code requirements for fire, life, and safety standards.

26. The applicant will be required to provide structural calculations for meeting wind and seismic design standards in accordance with all applicable Uniform Building Codes and Yolo County Code requirements.

27. The applicant shall pay all appropriate fees prior to the issuance of Building Permits, including but not limited to the Woodland Joint Unified School District, Dunnigan Fire District, and County facility fees.

YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT - (530) 757-3650

28. Visible emissions from stationary diesel-powered equipment are not allowed to exceed 40 percent opacity for more than three minutes in any one-hour, as regulated under District Rule 2.3, Ringelmann Chart.

29. Portable diesel fueled equipment greater than 50 horsepower, such as generators or pumps, must be registered with either the Air Resources Board's (ARB's) Portable Equipment Registration Program (PERP) (http://www.arb.ca.gov/perp/perp.htm) or with the District.

30. Architectural coatings and solvents used at the project site shall be compliant with District Rule 2.14, Architectural Coatings.

31. All stationary equipment, other than internal combustion engines less than 50 horsepower, emitting air pollutants controlled under District Rules and Regulations require an Authority to Construct (ATC) and Permit to Operate (PTO) from the District.

32. In order to reduce construction-related air pollutants, the following best management practices will be required at the project site to control dust:
    - All construction areas shall be watered as needed.
    - All trucks hauling soil, sand, or other loose materials shall be covered or required to maintain at least two feet of freeboard.
    - Unpaved access roads, parking areas, and staging areas shall be paved, watered, or treated with a non-toxic soil stabilizer, as needed.
    - Exposed stockpiles shall be covered, watered, or treated with a non-toxic soil stabilizer, as needed.
    - Traffic speeds on unpaved access roads shall be limited to 15 miles per hour.
    - Any visible soil material that is carried onto adjacent public streets shall be swept with water sweepers, as needed.