HAYKINGDOM PROCESSING & STORAGE IMPROVEMENTS PROJECT

Initial Study/Mitigated Negative Declaration

Prepared for:

January 2021

Yolo County
Department of Community Services
Planning Division
292 West Beamer Street
Woodland, CA 95695

Prepared by:

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Initial Study/Mitigated Negative Declaration

1. **Project Title:** Haykingdom Processing & Storage Improvements Project

2. **Lead Agency Name and Address:** Yolo County
Department of Community Services
Planning Division
292 West Beamer Street
Woodland, CA 95695

3. **Contact Person and Phone Number:** JD Trebec, Senior Planner
JD.Trebec@yolocounty.org
(530) 666-8036

4. **Project Location:** APN #038-040-033
26888 County Road 90
Winters, CA 95694

5. **Project Sponsor:** Larry Lu, CEO
Haykingdom, Inc.
larry@haykingdom.com
(530) 795-5888

6. **General Plan Designation:** Agriculture (AG)

7. **Zoning:** Agricultural Industrial (AI) &
Agricultural Intensive (AN)

8. **Description of Project:**

Introduction

Haykingdom, Inc. (the Applicant) has applied for a Major Use Permit (MUP) to improve their existing facility on a 120-acre property in Yolo County, CA (Yolo County APN 038-040-033). The property is zoned Agricultural Industrial (AI) and Agricultural Intensive (AN), and is designated for Agriculture (AG) in the General Plan. Approximately 62 acres of the property is used to farm hay varieties and the remaining 58 acres is used to process and store hay for export. All existing permanent structures including the three hay presses and 211,230 square feet of ancillary buildings consisting of an office, twelve hay storage barns, and two watch buildings, are located within the approximately 34-acre area of A-I zoning. Outside hay storage occurs on approximately 24 acres of the A-N zoning.

The "proposed project" includes improvements to the outdoor hay storage area to meet fire safety requirements; maintenance resurfacing of existing storage pads and access roads as needed to restore elevations and drivability; and the installation of tent barns within the footprint of the existing hay storage pads. The proposed project improvements would be to the outdoor hay storage area within the approximately 58 acres used to process and store hay for export (the "project site"). The proposed project would also bring the existing facility into compliance with provisions of the Yolo County Zoning Code. **Figure 1** shows the Regional Location, **Figure 2** shows the Project Location and **Figure 3** shows the Site Plan. The proposed project requires compliance with the California Environmental Quality Act (CEQA) because the MUP requires discretionary approval.

Project History and Background

Haykingdom Inc. is a USDA registered hay exporter. In 2002, Haykingdom established their current facility at 26888 County Road (CR) 90 in Yolo County. Haykingdom purchases hay from local and regional farmers in bales and double presses the hay bales to make them tighter and more suitable for shipment. Haykingdom exports customized assortments of hays and grasses along with varieties of straws that are available in large (1,300 pounds) and small bales (100 pounds) to Asian countries (i.e., China, Japan, South Korea, Indonesia, and Malaysia). Haykingdom does not sell to local customers except for loose chaff (hay cut into small pieces) or damaged hay that can't be exported. The main types of hay that are handled in the facility are Alfalfa, Sudan grass, and Rye grass. In 2018, the facility exported about 69,000 metric tons of hay. Currently, Haykingdom has 37 employees and with operational hours of 6:30 a.m. to 9:30 p.m. Monday through Friday and 6:30 a.m. to 3:00 p.m. on Saturdays. The facility is closed Sundays and national holidays. The proposed project would not alter existing operational activities (operational hours/day, employees and truck trips) at the project site.

The facility has suffered from several major fires in 2013 and 2019 due to outside hay bales absorbing sitting water causing spontaneous combustion. On April 3, 2019, the Yolo-Solano Air Quality Management District (YSAQMD) issued a Notice of Violation to Haykingdom for Open burning in a manner prohibited by District rules and becoming a public nuisance. The County Code Enforcement Division also issued Administrative Citations on April 25, 2019 and May 20, 2019. The Administrative Citations require that the Applicant apply for a use permit, which the Applicant agreed to do, as confirmed by an October 15, 2019 settlement agreement.

Project Objectives

The proposed project improvements are aimed to meet the County's fire safety requirements to prevent further violations of YSAQMD rules. The focus is on improving outdoor storage areas to keep stored hay dry. Excessive moisture is the most common cause of hay fires and wet hay is more likely to lead to a spontaneous-combustion fire than dry hay.

Construction Phasing and Schedule

Construction of the proposed project would occur intermittently over approximately six months between April 2021 and September 2021. Resurfacing of existing storage pads and roads would require approximately 3,000 cubic yards of broken cement pavers and recycled asphalt to be imported to the project site.

Circulation

The main access entrance point into the property is from CR 90, east of the project site. There are currently three gated entries/exits from CR 90. These access points provide private access and through-project circulation to public roadways for vehicles. Designated parking areas total 42 parking spaces with one accessible space. Proposed project improvements would improve fire department access within the project site.

Stormwater and Drainage

The property drains to the south via an existing culvert during smaller storm events and overtops the unsurfaced road located at the southern border of the property during larger storm events. See the Hydrology and Water Quality Section of this Initial Study for more information related to stormwater and drainage.

Water Supply

The property currently has a private Non-Transient Non-Community water system (NTNC regulated system CA5700795) with one domestic well and another well for fire safety and protection.

Sanitation

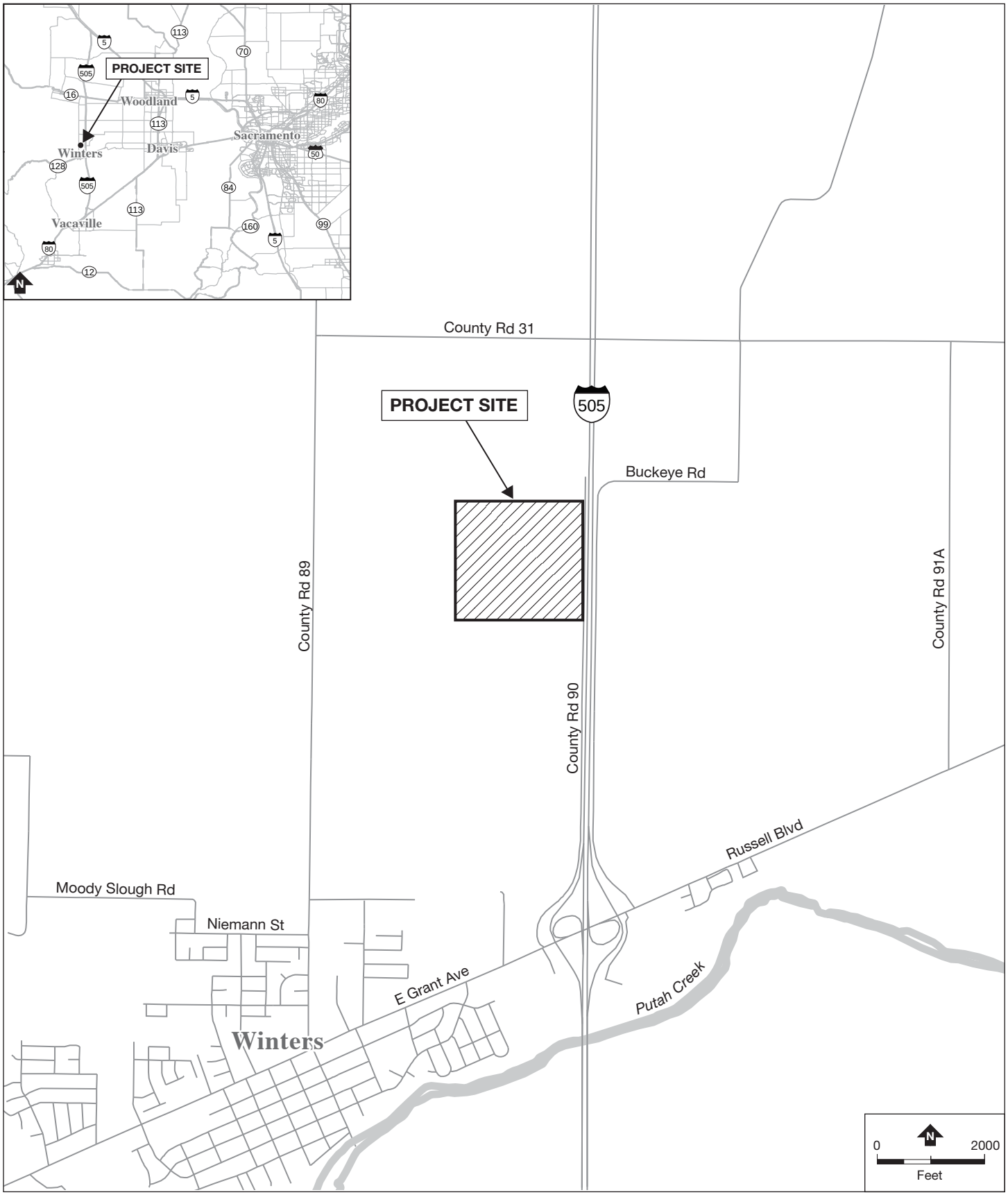
There is an existing private septic system onsite. There are no toxic or chemical wastes to be discharged from this system. There are no proposed changes to the existing septic system.

Fire Protection

The property is located in the Winters fire protection district (FPD) boundary. The Winters FPD signed a mutual aid agreement with other fire authorities in Yolo County in 2007. Winters FPD has a fire station located roughly three miles southwest of the property.

Police Protection

The Yolo County Sheriff-Coroner Department provides law enforcement services to the unincorporated areas of Yolo County. The nearest police department is the Winters Police Department.



Source: RCH Group

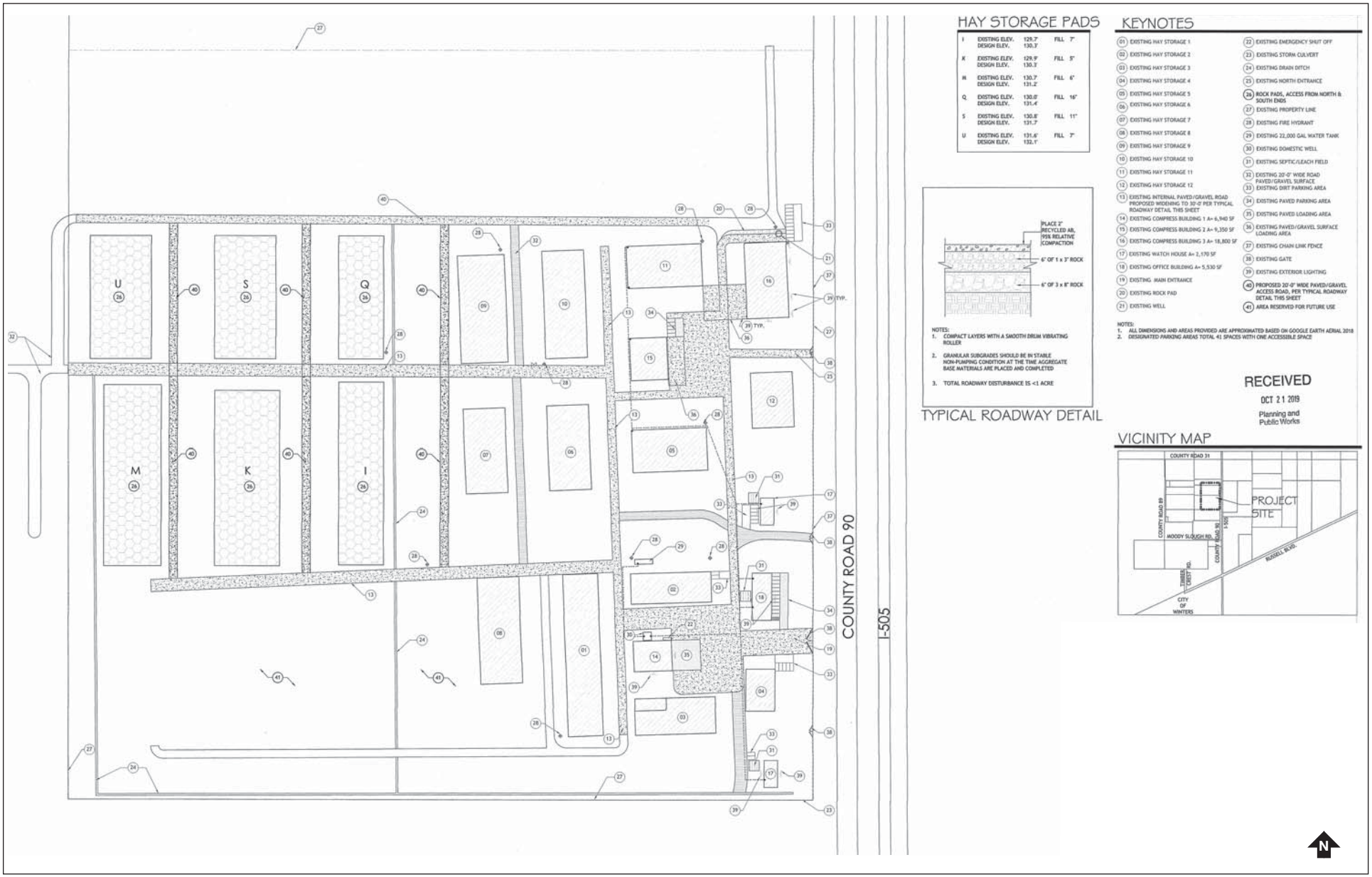
Figure 1
Regional Location

RCH GROUP
planning & environmental consulting

Source: RCH Group, 2019; Google Earth, 2019

Figure 2
Project Location

RCH GROUP
planning & environmental consulting



Source: Haykingdom, 2019

Figure 3
Site Plan

RCH GROUP
planning & environmental consulting

9. Surrounding Land Uses and Setting:

The property is used for agricultural production of hay and regional processing, storage, and export of hay products. Surrounding land uses include storage ponds and orchards to the north; CR 90, Highway 505 and agricultural lands to the east; a prune orchard to the south; and agricultural lands to the west. The property is located approximately 1.7 miles northeast of the City of Winters. The property is under a Williamson Act Contract and is located within Yolo Habitat Conservation Plan/ Natural Communities Conservation Plan (HCP/NCCP) Planning Unit 11 (Willow Slough Basin).

The closest buildings to the property are Mariani Nut Company (food processing) to the northeast (approximately 1,100 feet northeast of the northeast property boundary); a residential building to the south (approximately 1,650 feet south of the southern property boundary); and five residential properties to the west (approximately 2,500 feet west of the western property boundary). Vegetation includes typical agricultural land in all directions.

The minimum and maximum elevations for the property are approximately 135 feet and 127 feet above sea level. In areas where hay is grown the site topography generally slopes gradually from the northwest to the southeast. In the developed processing and storage area (the "project site") the topography generally slopes gradually from north to south.

The property is bordered by a network of irrigation ditches on the north, west and south side, as well as a ditch along the frontage road to the east. Site runoff is directed to the ditches on the south and east side of the property, and is then conveyed to the southeast corner of the property where two culverts, a 24" Corrugated Metal Pipe (CMP) and a 27" High Density Polyethylene (HDPE) culvert, extend under the service road to the south and outfall to the ditch along the frontage road of the adjacent property to the south.

10. Required Agency Approvals:

The proposed project requires Yolo County to approve the MUP.

11. Tribal Consultation:

Yolo County sent consultation letters to tribes requesting notification from Yolo County. The Yocha Dehe Wintun Nation responded to the County with a letter dated July 1, 2019 requesting the Cultural Resources Report and ground disturbance details for the proposed project. After becoming familiar with the proposed project, the Yocha Dehe Wintun Nation reported in a November 16, 2020 letter that the Tribe was not aware of any known cultural resources near the site and a did not request a cultural monitor during construction activity. The Tribe did request that cultural sensitivity training and the Yocha Dehe Wintun Nation Treatment Protocol be included as mitigation in this Initial Study (See Tribal Cultural Resources Section).

Environmental Factors Potentially Affected

The proposed project could potentially affect the environmental factor(s) checked below. The following pages present a more detailed checklist and discussion of each environmental factor.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Energy
☐ Geology /Soils	☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials
☒ Hydrology /Water Quality	☐ Land Use /Planning	☐ Mineral Resources
☐ Noise	☐ Population /Housing	☐ Public Services
☐ Recreation	☐ Transportation	☒ Tribal Cultural Resources
☐ Utilities /Service Systems	☒ Wildfire	☐ Mandatory Findings of Significance

DETERMINATION: (To be completed by Lead Agency)

On the basis of this initial study:

☐ 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 in 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 a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, 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 all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, no further environmental documentation is required.

JD Trebec — Signature

1/5/21 — Date

JD Trebec — Printed Name

Yolo County — For

AESTHETICS

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
1.	**AESTHETICS —** Except as provided in Public Resources Code Section 21099, **would the proposed 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 within a state scenic highway?	☐	☐	☐	☒
c)	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point. If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d)	Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	☐	☐	☐	☒

Introduction

The property is used for agricultural production of hay and local and regional hay processing, storage, and export. Surrounding land uses include storage ponds and orchards to the north; CR 90, Highway 505 and agricultural lands to the east; a prune orchard to the south; and agricultural lands to the west.

Discussion

a, b) **No Impact.** No scenic vistas would be affected by the proposed project. The property is not within or near a designated state scenic highway. No scenic resources within a state scenic highway would be affected by the proposed project. Therefore, the proposed project would have no impact.

c) **No Impact.** The proposed project would be consistent with the existing agricultural visual character and quality of its surroundings. The proposed project improvements would only be noticeable when onsite and would not substantially degrade the quality of public views of the site and its surroundings. Therefore, the proposed project would have no impact.

d) **No Impact.** The proposed project improvements would not include sources of light or glare. Therefore, the proposed project would have no impact.

AGRICULTURAL AND FOREST RESOURCES

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
2. AGRICULTURAL AND FOREST RESOURCES — In determining whether impacts to 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 Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. 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 forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. **Would the proposed 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 a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
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 which, 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

a) **No Impact.** According to the California Department of Conservation, the approximately 62 acres of the property used to farm hay varieties is designated as Prime Farmland and the remaining 58 acres used to process and store hay for export (the "project site") is designated as Other Land. Thus, there is no farmland on the project site and the proposed project would not convert Prime Farmland to a non-agricultural use. Therefore, the proposed project would result in no impact.

b) **No Impact.** The property is zoned Agricultural Industrial (A-I) and Agricultural Intensive (A-N). A-N zones are intended for intensive agricultural production and agriculturally-related support uses. A-I zoning is applied to rural land for more intensive processing and industrial-type uses. Likewise, the County allows agricultural and related support services on Williamson Act contracted lands. The proposed project consists of improvements to an agriculturally-related support use and would not conflict with the existing agricultural zoning or Williamson Act contract for the property. Therefore, the proposed project would result in no impact.

c, d) **No Impact**. The property is not zoned for forest land or timberland, nor does it contain forest land or timberland. Therefore, the proposed project would result in no impact.

e) **No Impact**. The proposed project would not convert farmland to a non-agricultural use. The project site does not contain forest land. Therefore, the proposed project would result in no impact.

References

California Department of Conservation, *California Important Farmland Finder*, 2016. https://maps.conservation.ca.gov/DLRP/CIFF/

AIR QUALITY

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
3. AIR QUALITY — Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. **Would the proposed project:**				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☐	☒

Introduction

Haykingdom has previously been found in violation of Yolo-Solano Air Quality Management District (YSAQMD) rules due to the smoke from several major fires due the spontaneous combustion of wet hay stored outdoors. The proposed project would prevent further violation of YSAQMD rules by raising outdoor hay storage pads and improving drainage.

The air quality calculations for the proposed project (**Appendix A**) and the air quality analysis presented below are consistent with the methodology for project review and analysis as described in the YSAQMD's *Handbook for Assessing and Mitigating Air Quality Impacts* (YSAQMD, 2007).

Discussion

a) **Less-than-Significant Impact.** The applicable air quality plan is the YSAQMD's *2015 Triennial Assessment and Plan Update (2015 Plan)*, which is the seventh update to the original 1992 Air Quality Attainment Plan (YSAQMD, 2016). The *2015 Plan* discusses the progress the YSAQMD has made towards improving air quality (ozone and particulates) in its jurisdiction since the last triennial update. The proposed project would not result in population or employment growth, as it would only include site improvements for the existing operation. The proposed project would prevent future air quality impacts by reducing the fire hazard and would not conflict with the *2015 Plan* for reducing ozone emissions. Therefore, the proposed project would result in a less-than-significant impact.

b) **Less-than-Significant Impact.** The proposed project would generate temporary criteria pollutant emissions during construction. The proposed project would not result in operational changes and would not result in increased criteria pollutant emissions during operations.

Construction activities would require hauling of materials and equipment, resurfacing of existing storage pads and access roads, and installation of tent barns over existing storage pads. Maximum daily and annual emissions that would be generated from construction activities are presented below. The Road Construction Emissions Model Version 9.0.0 was used to estimate the emissions from construction equipment, fugitive dust associated with construction, worker commuting vehicles and hauling vehicles. The air quality calculations for the construction activities can be found in **Appendix A**.

Table 1: Unmitigated Daily Project Emissions (pounds per day)

Condition	PM_{10}
Daily	11
YSAQMD CEQA Threshold	*80*
Significant?	*No*

Source: Roadway Construction Emissions Model, Version 9.0.0

Table 2: Unmitigated Annual Project Emissions (tons per year)

Condition	ROG	NO_x
Annual	0.1	1.3
YSAQMD CEQA Threshold	*10*	*10*
Significant?	*No*	*No*

Source: Roadway Construction Emissions Model, Version 9.0.0

As shown above in **Table 1 and 2**, the proposed project's construction activities would not exceed the YSAQMD CEQA significance thresholds. Therefore, the proposed project would result in a less-than-significant impact.

c) **Less-than-Significant Impact.** The operation of heavy-duty equipment during construction of the proposed project would constitute a new emission source of toxic air contaminants (TACs) including diesel particulate matter (DPM) and $PM_{2.5}$. The closest sensitive receptor is a residential building to the south (approximately 1,650 feet south of the southern property boundary). Because construction of the proposed project would be short-term (approximately six months) and the nearest sensitive receptor is approximately 1,650 feet away, it is not anticipated that construction of the proposed project would expose sensitive receptors to substantial pollutant concentrations and would reduce potential future impacts by improving fire safety. Therefore, the proposed project would result in a less-than-significant impact.

d) **No Impact.** The proposed project would not generate objectionable odors. Therefore, the proposed project would result in no impact.

References

SMAQMD, 2018. *Road Construction Emissions Model. May 2018*. http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/CEQA-Guidance-Tools

YSAQMD, 2007. *Handbook for Assessing and Mitigating Air Quality Impacts*. July 11, 2007. http://www.ysaqmd.org/wp-content/uploads/Planning/CEQAHandbook2007.pdf

YSAQMD, 2016. *2015 Triennial Assessment and Plan Update*. July 13, 2016. http://www.ysaqmd.org/wp-content/uploads/Planning/Final-2015-Triennial-Plan.pdf

BIOLOGICAL RESOURCES

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
4. BIOLOGICAL RESOURCES — Would the proposed 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, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, 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?	☐	☐	☒	☐

Introduction

This section is based on a Biological Resources Assessment (Technical Memorandum, September 2019) conducted by Bumgardner Biological Consultants (BBC). The Biological Resources Assessment (2019) is **Appendix B** to this Initial Study.

Setting

The Yolo Habitat Conservancy considers the proposed project to be an agricultural economic development project, which is a covered activity in the Yolo *Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP)*, therefore compliance with *HCP/NCCP* is required. The *HCP/NCCP* requires the identification of land covers and covered species habitats that are associated with the proposed project. The 58-acre hay processing and storage area (the "project site") is categorized as 2.2 acres of landscaping, 10.3 acres of hardscape, and 45.5 acres of barren ground for hay storage.

The *HCP/NCCP* is a countywide plan that coordinates mitigation to conserve 12 identified sensitive species and 8,000 acres of natural communities and agricultural land on which the species depend on. All covered projects are expected to follow the applicable Avoidance and Minimization Measures (AMM's) that are identified in the *HCP/NCCP* to ensure impacts to biological resources are reduced. For the proposed project the following AMMs are required:

- AMM 2: Design Developments to Minimize Indirect Effects at Urban-Habitat Interfaces
- AMM 16: Minimize Take and Adverse Effects on Habitat of Swainson's Hawk and White-Tailed Kite
- AMM 18: Minimize Take and Adverse Effects on Western Burrowing Owl
- AMM 21: Minimize Take and Adverse Effects on Habitat of Tricolored Blackbird

Discussion

a, f) **Less-than-Significant Impact**. Prior to planning level surveys, BBC reviewed historical aerial photographs to assess land cover types and land use in the vicinity of the proposed project. BBC reviewed for documented occurrences of special-status species and special-status birds (including covered species) and sensitive natural communities through the California Natural Diversity Database (CNDDB) and eBird database, and through the evaluation of modeled covered species habitat and occurrences of covered species presented in the *HCP/NCCP*. Planning level surveys of the project site were conducted on August 2 and 16, 2019.

Listed and Special-Status Plants

There were no special-status plants identified during the surveys. There are no special-status plants known to occur on the project site.

Listed and Special-Status Animals

BBC reviewed documented occurrences of special-status species within the threshold distances prescribed by the *HCP/NCCP Permitting Guide*. There were no identifications of nesting birds, including Swainson's hawk (*Buteo swainsoni),* White-tailed kite (*Elanus leucurus),* or Tricolored blackbird (*Ageaius tricolor)* or other special-status species on or immediately adjacent to the project site. However, the review found that suitable habitat for the above species mentioned occurs adjacent to the project site and within appropriate distance thresholds for:

- Swainson's hawk: Potential nesting habitat within 1,320 feet of proposed project – a linear row of mature native and non-native trees along CR 19 and up to 1,320 feet south of the project site and single trees along the western proposed project boundary. Potential hunting habitat within 1,320 feet of the proposed project – Sudan grass (north and west of the proposed project) as well as field crops and grassland/forbs east of CR 90 and north of the proposed project.
- White-tailed kite: Potential nesting habitat within 1,320 feet of the proposed project – a linear row of mature native and non-native trees along CR 19 and up to 1,320 feet south of the project site and single trees along the western proposed project boundary. Potential hunting habitat within 1,320 feet of the proposed project – Sudan grass (north and west of the proposed project) as well as field crops and grassland/forbs east of CR 90 and north of the proposed project.
- Tricolored blackbird: Nesting and foraging habitat within 1,300 feet of the proposed project. Sudan Grass to the north and west of the proposed project.

BBC found no evidence of habitat that could be occupied by burrowing owl within 500 feet of the proposed project. Potential of ground squirrel's quickly colonizing lands on the project site is possible and this can leave suitable habitat for burrowing owls. Therefore, there is approximately 1.4 acres of land (northeastern site perimeter) within the project site that could potentially be suitable habitat for burrowing owls in the future.

The planning level surveys extended out 1,320 feet from the proposed project boundaries to address any evidence of adjacent covered species, covered species habitat or sensitive vegetation communities. The surveys found no evidence of covered species or nearby sensitive natural communities. However, due to suitable habitat for the species mentioned above with the appropriate distance thresholds, and the potential risk of indirect effects from the proposed project, the proposed project is required to adhere to applicable AMMs identified in the Yolo *HCP/NCCP* (AMM's 2, 16, 18 and 21) to prevent substantial direct and indirect impacts to habitat and special-status species. The proposed project with implementation of the applicable AMM's in the Yolo *HCP/NCCP* would ensure compliance with the provisions of adopted habitat conservation plans, natural community conservation plans and other approved habitat conservation plans. Therefore, the proposed project would result in a less-than-significant impact.

b, c) **Less-than-Significant Impact.** The proposed project supports only Developed (Urban or Built-up, Vegetated) cover types. The site is "landlocked" by other, similar agricultural uses. BBC used the Wetlands Mapper found in the USFWS *National Wetlands Inventory* and results show that no wetlands were

identified for the project site. The finding is also supported by ground-truthing conducted during the planning level surveys of the project site (BBC, 2019). There are no riparian or natural sensitive communities on the project site. Therefore, the proposed project would result in a less-than-significant impact.

d) **Less-than-Significant Impact**. The proposed project would be consistent with the surrounding area and would not substantially affect wildlife movement. AMMs 2, 16, 18 and 21 would reduce any potentially significant impacts to special-status bird species identified in the Yolo *HCP/NCCP* and their potential habitats to less than significant impacts. Therefore, the proposed project would result in a less-than-significant impact.

e) **Less-than-Significant Impact**. The proposed project would not conflict with any local policies or ordinances for protecting biological resources. The proposed project would not include removal of any trees. Therefore, the proposed project would result in a less-than-significant impact.

References

Bumgardner Biological Consulting, 2019. *Technical Memorandum for planning level surveys associated with the Haykingdom, Inc. Project.*

County of Yolo, *2030 Countywide General Plan Conservation and Open Space Element.*

CULTURAL RESOURCES

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
5.	**CULTURAL RESOURCES — Would the proposed project:**				
a)	Cause a substantial adverse change in the significance of a historical resource pursuant to in §15064.5?	☐	☐	☒	☐
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c)	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

Introduction

This section is based on a *Cultural Resources Inventory Report* (*Cultural Report*) for the proposed project conducted by ECORP Consulting, Inc. (ECORP, 2020).

ECORP completed a cultural resources investigation of the approximately 58-acre hay storage and processing area (the "project site"). The cultural resources inventory included a records search with the Northwestern Information Center (NWIC) of the

California Historical Resources Information System (CHRIS), literature review, and field survey conducted in December 2019. The records search results indicated that no previous cultural resources studies have been conducted and no previously recorded resources are located within the project area. As a result of the field survey, no cultural resources were identified.

Additionally, the 2030 Countywide General Plan for Yolo County includes Implementation Action CO-A65 requiring that when cultural resources are encountered inadvertently during site preparation or construction, all work within the vicinity of the discovery is immediately halted and the area protected from further disturbance. The project applicant shall immediately notify the County Department of Community Services and the County Coroner in the case of discovery of human remains. Where human remains are determined to be Native American, the project applicant shall consult with the Native American Heritage Commission (NAHC) to determine the person most likely descended from the deceased. The applicant shall confer with the descendant to determine the appropriate treatment for the human remains consistent with State law.

Discussion

a) **Less-than-Significant Impact.** The southeastern corner of the project site was inspected for the structures present on historical topographic maps; however, only a modern building is situated near the location of the depicted buildings. No evidence of historic-period structures is present within the project site or project area, likely due to the construction of CR 90 and I-505. Furthermore, the existing buildings and structures were confirmed through archival research and historical map and photograph review to be of modern origin (constructed circa 2002) and therefore, do not constitute historical resources. Thus, no historic properties under section 106 of the National Historic Preservation Act (NHPA) or historical properties under CEQA would be affected by the proposed project. Therefore, the proposed project would result in a less-than-significant impact.

b, c) **Less-than-Significant Impact.** No cultural resources were identified on the project site as result of the records search and field survey. Due to the presence of alluvium along Putah Creek, approximately 1.5 miles south of the project site, and given the likelihood of pre-contact archaeological sites located along perennial waterways, there exists potential for buried pre-contact archaeological sites in the project area. This factor coupled with the Holocene alluvium soil deposition in the project area makes this buried pre-contact site potential moderate. However, the proposed project would not require excavation or trenching activities and would consist of surface improvements.

In the unlikely event that human remains or archaeological or tribal cultural resources are inadvertently discovered, Yolo County includes the General Plan Implementation Action CO-A65 discussed above as standard Conditions of Approval for the project. Therefore, the proposed project would result in a less-than-significant impact.

References

ECORP Consulting, Inc. (ECORP). *Cultural Resources Inventory Report.* January 3, 2020.

ENERGY

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
6.	**Energy — Would the proposed project:**				
a)	Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b)	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

Setting

The existing facility on the project site consists of several buildings that consume energy for the current operation. Operation of the existing facility also consists of onsite equipment, heavy truck trips for exporting hay, and employee commute trips. The proposed project would not result in any operational changes.

Discussion

a) **Less-than-Significant Impact**. Construction of the proposed project would require consumption of petroleum fuels (primarily diesel) by construction workers travelling to and from the site, by haul trucks importing construction materials and supplies to the site, and by heavy construction equipment onsite. The energy required for construction would be temporary and would not be substantial. Once the proposed project is completed, onsite energy consumption would return to existing conditions prior to construction because the proposed project would not result in any operational changes. The proposed project would not result in wasteful, inefficient or unnecessary consumption of energy resources. Therefore, the proposed project would result in a less-than-significant impact.

b) **No Impact**. As noted in a) above, the energy required for construction would be temporary and would not be substantial. The proposed project would not increase energy use during operations. The short-term construction activities

of the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, the proposed project would result in a less-than-significant impact.

GEOLOGY AND SOILS

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
7. GEOLOGY AND SOILS— Would the proposed project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) 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.)	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) 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 on- or off-site 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 direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

Setting

Yolo County has a low probability for earthquake hazards compared to the rest of California (Yolo County, 2009). As identified in the General Plan, there are two main faults located in Yolo County, the Hunting Creek Fault and the Dunnigan Hills Fault. The Dunnigan Hills Fault is not active. The Hunting Creek Fault is located approximately 26 miles northwest of the property in an area that is sparsely populated. It is identified by the California Geological Survey (CGS) as active or potentially active, and subject to surface rupture. Only a very short tract of the fault occurs in the northwest part of the County. The majority of the fault is located in Lake and Napa Counties (Yolo County, 2009).

Discussion

ai, aii) **Less-than-Significant Impact**. The Alquist-Priolo Earthquake Fault Zoning Act requires the delineation of zones by the California Department of Conservation, Geological Survey along sufficiently active and well-defined faults.[1] The purpose of the Act is to restrict construction of structures intended for human occupancy along traces of known active faults. Alquist-Priolo Zones are designated areas most likely to experience surface fault rupture, although fault rupture is not necessarily restricted to those specifically zoned areas. The Act prohibits development directly over any traces of an active fault line.

The project site is not located within an Alquist-Priolo Earthquake Fault Zone and is approximately 26 miles from the nearest active fault. The project site is already developed with the existing facility and the proposed project improvements would not include any structures intended for human occupancy. Tent barns, if constructed over existing storage pads, would be designed, engineered, and built in accordance with applicable standards. Therefore, the proposed project would result in a less-than-significant impact.

aiii,aiv) **Less-than-Significant Impact.** The project site is located on flat and stable soil. The project site is already developed with the existing facility and the proposed project improvements would not include any structures intended for human occupancy. Tent barns, if constructed over existing storage pads, would be designed, engineered, and built in accordance with applicable standards. Therefore, the proposed project would result in a less-than-significant impact.

b) **Less-than-Significant Impact**. The proposed project improvements would require minimal disturbance of the project site. Ground disturbance would consist of widening existing or creating new gravel access roads. Construction of proposed improvements would occur on flat land with low potential for erosion and loss of topsoil. Therefore, the proposed project would result in a less-than-significant impact.

c) **Less-than-Significant Impact**. The project site is located on flat and stable soil. The project site is already developed with the existing facility and the proposed project improvements would not include any structures intended for human occupancy. Tent barns, if constructed over existing storage pads, would be designed, engineered, and built in accordance with applicable

[1] An active fault is defined by the State of California is a fault that has had surface displacement within Holocene time (approximately the last 11,000 years). A potentially active fault is defined as a fault that has shown evidence of surface displacement during the Quaternary (last 1.6 million years), unless direct geologic evidence demonstrates inactivity for all of the Holocene or longer. (Hart, 1997).

standards. Therefore, the proposed project would result in a less-than-significant impact.

d) **Less-than-Significant Impact**. Yolo County USDA Soil GIS Database identifies the project area as "normal" to "moderate" expansive soil. The project site is already developed with the existing facility and the proposed project improvements would not include any structures intended for human occupancy. Tent barns, if constructed over existing storage pads, would be designed, engineered, and built in accordance with applicable standards. Therefore, the proposed project would result in a less-than-significant impact.

e) **No Impact**. The proposed project would not construct or alter the existing septic system onsite. Therefore, the proposed project would result in no impact.

f) **Less-than-Significant Impact**. Construction of the proposed project would not involve excavation and trenching activities. As noted in the Cultural Resources Section, although there is not enough evidence to indicate a potentially significant impact to cultural resources, the Yolo County 2030 General Plan requires protocols for the inadvertent discovery of human remains and cultural resources, which will be incorporated into the Conditions of Approval for the proposed project. Therefore, the proposed project would result in a less-than-significant impact.

References

County of Yolo, 2012. *Yolo County Operational Area Multi-Jurisdictional Hazard Mitigation Plan*

County of Yolo 2030 Countywide General Plan, 2009. *Health and Safety Element.*

County of Yolo. Yolo Data: USDA Soils: https://yodata-yolo.opendata.arcgis.com/

Department of Conservation. *The Alquist-Priolo Earthquake Fault Zoning Act.* http://www.conservation.ca.gov/cgs/rghm/ap.

GREENHOUSE GAS EMISSIONS

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
8.	**GREENHOUSE GAS EMISSIONS — Would the proposed project:**				
a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b)	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Discussion

a) **Less-than-Significant Impact.** Minor GHG emissions from sources such as motor vehicles and onsite heavy equipment would be generated during construction of the proposed project. Construction GHG emissions are a one-time release and are not expected to generate a significant contribution to global climate change in the long-term. Once complete, no new operational GHG emissions would be generated because the proposed project would not result in operational changes. Therefore, the proposed project would result in a less-than-significant impact.

b) **Less-than-Significant Impact**. Yolo County adopted its Climate Action Plan (CAP) in 2011 as an implementation measure of the General Plan. The proposed project would not conflict with the CAP, as there are no GHG reduction measures applicable to the proposed project. The proposed project would result in a small one-time release of GHG emissions during construction. The proposed project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the GHG emissions. Therefore, the proposed project would result in a less-than-significant impact.

References

Yolo County, *Climate Action Plan*, March 2011. https://www.yolocounty.org/home/showdocument?id=18005

HAZARDS AND HAZARDOUS MATERIALS

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
9.	**HAZARDS AND HAZARDOUS MATERIALS — Would the proposed 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 handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d)	Be located on a site which 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)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g)	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

Introduction

The California Department of Toxic Substances Control (DTSC) defines a hazardous material as: “a substance or combination of substances that, because of its quantity, concentration or physical, chemical, or infectious characteristics, may either: 1) cause, or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating illness; or 2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, disposed of, or otherwise managed.” Hazardous materials are generally classified based on the presence of one or more of the following four properties: toxicity, ignitability, corrosivity and reactivity.

Regulations governing the use, management, handling, transportation and disposal of hazardous materials and waste are administered by federal, state and local governmental agencies. Federal regulations governing hazardous materials and waste include the Resource Conservation, and Recovery Act of 1976 (RCRA); the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA); and the Superfund Amendments and Re-authorization Act of 1986 (SARA).

The California DTSC maintains a hazardous waste and substances site list, also known as the "Cortese List." The property is not on the Cortese List.

Discussion

a, b) **Less-than-Significant Impact**. During construction of the proposed project, the use of hazardous substances would be limited in nature and subject to standard handling and storage requirements. The proposed project would comply with all regulations regarding the routine transport, use, or disposal of hazardous materials. Therefore, the proposed project would result in a less-than-significant impact.

c) **No Impact**. The project site is not within a quarter mile of a school. The closest schools are in Winters, but are greater than 1.5 miles from the project site. Therefore, the proposed project would result in no impact.

d) **No Impact**. The DTSC and State Water Resources Control Board (SWRCB) compile lists of hazardous material sites pursuant to Government Code Section 65962.5. The property is not included on the databases maintained by the DTSC (Envirostor) and the SWRCB (Geotracker) (DTSC, 2019 and SWRCB, 2019). Therefore, the proposed project would result in no impact.

e) **No Impact**. The project site is not located within an airport land use plan and is not within two miles of a public airport. The nearest airport is the Yolo County Airport approximately 5.5 miles northeast of the project site. Therefore, the proposed project would result in no impact.

f) **No Impact**. The proposed project would not interfere with emergency response plans or evacuation plans. The proposed project would not impede or require diversion of rescue vehicles or evacuation traffic in the event of a life-threatening emergency. The proposed project would improve emergency vehicle access onsite. Therefore, the proposed project would result in no impact.

g) **Less-than-Significant Impact**. The proposed project improvements are aimed to meet the County's fire safety requirements and to improve storage areas to keep stored hay dry, as wet way poses a fire risk. Therefore, the proposed project would have a less-than-significant impact.

References

Department of Toxic Substances Control (DTSC), *DTSC's Envirostor Database*, https://www.envirostor.dtsc.ca.gov/public/, accessed November 23, 2020.

State Water Resources Control Board (SWRCB), *Geotracker*, https://geotracker.waterboards.ca.gov/, accessed November 23, 2020.

HYDROLOGY AND WATER QUALITY

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
10. HYDROLOGY AND WATER QUALITY- Would the proposed project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion of siltation on- or off-site;	☐	☒	☐	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☒	☐	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☒	☐	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Discussion

a) **Less-than-Significant Impact.** The proposed project would consist of minor improvements to the project site and no operational changes at the existing facility. The facility has had no known water quality violations and would be expected to continue operating without water quality violations after the proposed project improvements are complete. Therefore, the proposed project would result in a less-than-significant impact.

b) **Less-than-Significant Impact.** Yolo County has an extensive system of shallow and deep aquifers on which the county depends for domestic and agricultural water supply (Yolo County, 2009). The existing operation uses a private non-transient non-community (NTNC) water system, which includes one domestic well and another well onsite for fire protection. The proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge. Therefore, the proposed project would result in a less-than-significant impact.

c.i - c.iii) **Less-than-Significant Impact with Mitigation**. A Hydrology and Hydraulics Study (Hydrology Study) was prepared by Wood Rodgers, Inc. for the proposed project, which is **Appendix C** to this Initial Study. The Hydrology Study included modeling of a 100-year, 24-hour storm event for baseline, with-project, and with- project mitigated conditions. The Hydrology Study concluded that with implementation of recommended mitigation, the proposed project can be fully mitigated such that no increases in floodplain depth would occur at properties adjacent to or downstream of the property and less than significant drainage impacts would occur. The recommended mitigation measures from the Hydrology study are implemented as **Mitigation Measure HYD-1.** Therefore, the proposed project would result in a less-than-significant impact with mitigation.

Mitigation Measure HYD-1: Potential mitigation for proposed site improvements shall be made through a combination of the following three facilities, among other options developed prior to construction of the proposed project with approval from the County Public Works Department.

- A proposed channel running through the project site that is approximately 3,700 feet long with a depth of 3 feet, 3:1 side slopes, and a bottom width at a maximum of 12 feet.

- Raising the area adjacent to an unsurfaced road located along the southern border of the property. The road is proposed to be raised between zero and four feet in order to achieve a minimum elevation of 131 (feet, NAVD 88) for approximately 1,300 feet beginning near the southwest corner of the property.

- Lowering an area measuring 65 feet in width and 90 feet in length adjacent to the hay storage pad located near the southwest corner of the project site to elevation 130.1 (feet, NAVD 88). This elevation coincides with the elevation of the storage pad.

c.iv, d) **Less-than-Significant Impact**. According to the Federal Emergency Management Agency's (FEMA's) Flood Map Service Center, the project site is located in an Area of Minimal Flood Hazard. The project site is not in an area where it would be at risk from a tsunami, or seiche. The proposed project would not change the existing drainage patterns on the project site and it would not impede or redirect flood flows. Therefore, the proposed project would result in a less-than-significant impact.

e) **Less-than-Significant Impact**. The proposed project would not conflict Central Valley Regional Water Quality Control Board plans or the Yolo County 2006

Groundwater Management Plan. Therefore, the proposed project would result in a less-than-significant impact.

References

FEMA, *Flood Map Service Center: Search By Address, Yolo County Unincorporated Areas.* https://msc.fema.gov/portal/home

Wood Rodgers, Inc., *Haykingdom, Inc. – Hydrology and Hydraulics Study,* October 9, 2020.

United States EPA, *National Pollutant Discharge Elimination System General Permit for Discharges from Construction Activities,* February 6, 2012.

LAND USE AND LAND USE PLANNING

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
11.	**LAND USE AND LAND USE PLANNING — Would the proposed project:**				
a)	Physically divide an established community?	☐	☐	☐	☒
b)	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Discussion

a) **No Impact.** The proposed project lies outside the community of Winters in the rural unincorporated county in an area of farmland and agricultural support industries. Therefore, the proposed project would result in no impact in terms of dividing an existing community.

b) **Less-than-Significant Impact.** The property is zoned Agricultural Industrial (AI) and Agricultural Intensive (AN), and is designated for Agriculture (AG) in the General Plan. The proposed project would not conflict with current zoning and land use. The minor improvements associated with the proposed project would not conflict with any land use plans, policies or regulations. Therefore, the proposed project would result in a less-than-significant impact.

MINERAL RESOURCES

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
12. MINERAL RESOURCES — Would the proposed 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

a, b) **No Impact.** The California Department of Conservation Mines Online tool does not identify any documented mines on the property. The property does not contain a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. Therefore, the proposed project would result in no impact.

References

Department of Conservation, Division of Mine Reclamation, *Mines Online*. http://maps.conservation.ca.gov/mol/index.html Accessed November 23, 2020.

United States Geological Survey (USGS). *Mineral Resources Online Spatial Data.* https://mrdata.usgs.gov/. Accessed November 23, 2020.

Yolo County 2030 Countywide General Plan, 2009. *IV. Setting, impacts, and mitigation measures, Geology, Soils, Seismicity and Mineral Resources.*

NOISE

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
13. NOISE — Would the proposed project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Introduction

This noise analysis includes a Noise Appendix (**Appendix D**). The Noise Appendix includes background noise information and the State Land Use Compatibility standards for Community Noise.

Noise Standards

State Guidelines

The State Land Use Compatibility standards for Community Noise (Table 1 of the Noise Appendix) indicate that for agriculture land uses, a Community Noise Exposure up to 75 dB (Ldn or CNEL) is normally acceptable, and a Community Noise Exposure up to 80 dB is conditionally acceptable.

Yolo County 2030 Countywide General Plan

Yolo County has not adopted a noise ordinance that sets specific noise level limits for different land uses. The Yolo County 2030 Countywide General Plan's Health and Safety Element Noise Compatibility Guidelines has adopted the State of California Department of Health Services recommended Community Noise Exposure standards for exterior noise. In these guidelines, land used for agriculture is in a category of land uses that is considered the least sensitive to noise impacts. These recommended standards are provided in acceptable decibel levels (dB). The noise levels are in the context of Community Noise Equivalent Level (CNEL), which reflect average noise levels over a 24-hour period.

Yolo County Code

Yolo County does not have a noise ordinance, but implements the State Guidelines when it is applicable. Relevant noise standards for Agricultural, Mining and Reclamation Standards appear in Yolo County Code, Section 10-8.416 Noise: General Standard, [Ordinance 1276, effective December 6, 2001]. The following applies for the proposed project:

From 6:00 p.m. to 6:00 a.m., noise levels shall not exceed an average noise equivalent (Leq) of eighty (80) decibels (dBA) measured at the property boundaries of the site.

Discussion

a) **Less-than-Significant Impact.**

Existing Noise

Existing noise conditions in Yolo County were assessed as part of the General Plan update. The dominant sources of noise in Yolo County are mobile, related to automobile and truck traffic, aircraft and trains. Stationary sources of noise in the County include farming, mining, commercial, industrial, and construction

sites (Yolo County, 2009). The project site is located adjacent to CR 90 and I-505, which are the primary noise sources in the project area.

Construction Noise

Construction activities would require the use of numerous pieces of noise-generating equipment. Such equipment is already used onsite daily for operational activities. The closest sensitive receptor is a residential building to the south (approximately 1,650 feet south of the southern project boundary). Any change in noise levels at the project site during construction would be imperceptible from existing operational noise at this distance and would be masked by traffic noise on CR 90 and I-505.

After construction of the proposed project, noise levels would return to the existing conditions. The proposed project would not result in any operational changes at the project site. Therefore, the proposed project would result in a less-than-significant impact.

b) **Less-than-Significant Impact**. The closest building to the project site is the Mariani Nut Company (Food processing) to the northeast, which is approximately 1,100 feet northeast of the northeast property boundary. Vibrational effects from construction activities are only a concern within 25 feet of existing structures (Caltrans, 2002). The proposed project would not involve the use of construction equipment or processes that would result in potentially significant levels of ground vibration (i.e. pile drivers or blasting). Therefore, the proposed project would result in a less-than-significant impact.

c) **No Impact**. The project site is not located within an airport land use plan or within two miles of a public or public use airport. The nearest airport is Blake Sky Park Airport (10 miles southwest). There are no private airstrips located near the project site. The proposed project would not expose people working or visiting in the project area to excessive airport noise levels. Therefore, the proposed project would result in no impact.

References

Caltrans, *Transportation Related Earthborne Vibrations*, prepared by the Division of Environmental Analysis, Office of Noise, Air Quality, and Hazardous Waste Management, 2002.

County of Yolo, *2030 Countywide General Plan Health and Safety Element*

County of Yolo*, County Code, Chapter 8, Section 10-8.416.*

POPULATION AND HOUSING

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
14. POPULATION AND HOUSING — Would the proposed project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

a, b) **No Impact.** The proposed project would not create new residences nor would it require an increase in the number of employees onsite that would induce substantial unplanned population growth. The proposed project consists of improvements to an existing hay processing and exporting business and would not displace existing people or housing units. Therefore, the proposed project would result in no impact.

PUBLIC SERVICES

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
15. PUBLIC SERVICES — Would the proposed project:				
a) Result in substantial adverse physical impacts associated with the provision of, or the 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:				
i) Fire protection?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Discussion

a.i) **Less-than-Significant Impact.** There are 18 local fire districts (FPD's) that provide fire protection, rescue, and emergency medical services within the unincorporated areas of Yolo County. The project site is located in the Winters FPD fire protection district boundary. The Winters FPD signed a mutual aid agreement with other fire authorities in Yolo County in 2007. Winters FPD

employs three paid firefighters, one paid chief, one paid secretary, 21 volunteer firefighters and emergency medical technicians. Winters FPD has a fire station located roughly 2.5 miles southwest of the project site.

The proposed project improvements are aimed to meet the County's fire safety requirements and to improve storage areas to keep stored hay dry as wet hay poses a greater fire risk. The proposed project is expected to reduce the need for fire protection services at the project site. Therefore, the proposed project would result in a less-than-significant impact.

a.ii) **No Impact**. The Yolo County Sheriff-Coroner Department provides law enforcement services to the unincorporated areas of Yolo County. The Sheriff's department has 276 full time staff, 96 of which are sworn officers. The nearest police department is the Winters Police Department. The proposed project consists of improvements at an existing facility, thus it would not create the need for new police protection facilities. Therefore, the proposed project would result in no impact.

a.iii) **No Impact**. The proposed project consists of improvements at an existing facility, thus it would not increase population or create the need for new school facilities. Therefore, the proposed project would result in no impact.

a.iv) **No Impact**. The proposed project consists of improvements at an existing facility, thus it would not increase population or create the need for new recreational facilities. Therefore, the proposed project would result in no impact.

a.v) **No Impact**. The proposed project would not require the construction of new governmental facilities or require physically altering existing facilities to maintain the County's public services. Therefore, the proposed project would result in no impact.

RECREATION

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
16. RECREATION — Would the proposed project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities 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

a, b) **No Impact.** The nearest recreational facilities are in the City of Winters. There are no recreational facilities in the vicinity of the existing facility. The proposed project would not increase the number of employees or cause an increase in population that would increase use of existing recreational facilities nor would it include or require the construction or expansion of recreational facilities. Therefore, the proposed project would result in no impact.

TRANSPORTATION

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
17. TRANSPORTATION — Would the proposed project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☐	☒

Discussion

a) **Less-than-Significant Impact.** The proposed project would result in temporary vehicle trips during construction of the proposed project. Vehicles associated with construction of the proposed project would use regional and local roadways, primary I-505 and CR 90 for accessing the project site. Vehicle trips would consist of any required construction material or equipment deliveries and construction worker trips. Once complete, the proposed project would not result in any operational changes at the project site and would not generate any new vehicle trips. The negligible amount of vehicle trips required during construction would not conflict with any program, plan, or policy addressing the circulation system. Therefore, the proposed project would result in a less-than-significant impact.

b) **Less-than-Significant Impact.** As discussed in CEQA Guidelines Section 15064.3 (b), a qualitative analysis of construction traffic vehicle miles travelled (VMT) may be appropriate. Construction worker commuter trips are expected to come from the local area. Construction material and equipment deliveries are also expected to come from the local area as there are options within the County. Construction trips would be temporary and very limited in volume due to the limited materials and workers required for construction of

the proposed project. Once complete, the proposed project would not result in any operational changes at the project site and would not generate any new vehicle trips. Therefore, the proposed project would result in a less-than-significant impact.

c) **No Impact**. The proposed project would not involve any new hazardous design features nor introduce any new uses that may be incompatible with transportation. The proposed project would not alter site access and would only improve onsite circulation creating wider roadways and additional roadways onsite. Therefore, the proposed project would result in no impact.

d) **No Impact**. The proposed project would not affect emergency response routes. The proposed project would improve emergency vehicle access onsite. Therefore, the proposed project would result in no impact.

TRIBAL CULTURAL RESOURCES

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
18. TRIBAL CULTURAL RESOURCES — Would the proposed project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☒	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.	☐	☒	☐	☐

Background

Tribal Cultural Resources (TCRs) is a newly defined class of resources under Assembly Bill 52 (AB 52). TCRs include sites, features, places, cultural landscapes, and sacred places or objects that have cultural value or significance to a Tribe. To qualify as a TCR, the resource must either: 1) be listed on, or be eligible for, listing on the CRHR or other local historic register; or 2) constitute a resource that the lead agency, at its discretion and supported by substantial evidence, determines should be treated as a TCR (PRC §21074). AB 52 also states that tribal representatives are

considered experts appropriate for providing substantial evidence regarding the locations, types, and significance of TCRs within their traditional and cultural affiliated geographic areas, and therefore, the identification and analysis of TCRs should involve government-to-government tribal consultation between the CEQA lead agency and interested tribal groups and/or tribal persons. (PRC § 21080.3.1(a)).

The Yocha Dehe Wintun Nation responded to the County's AB 52 Consultation letter with a letter dated July 1, 2019 requesting the Cultural Resources Report and ground disturbance details for the proposed project. After becoming familiar with the proposed project, the Yocha Dehe Wintun Nation reported in a November 16, 2020 letter that the Tribe was not aware of any known tribal cultural resources near the site and did not request a cultural monitor during construction activity. The Tribe did request that cultural sensitivity training and the Yocha Dehe Wintun Nation Treatment Protocol. The response from the Tribe is incorporated in **Mitigation Measure TCR-1** below.

Discussion

a) **Less-than-Significant Impact.** No cultural resources either listed or eligible for listing by the State or County were identified on the project site as result of the records search and AB 52 consultation. Therefore, the proposed project would have a less than significant impact.

b) **Less-than-Significant Impact with Mitigation.** As discussed above, no tribal cultural resources are known to occur on the project site or in the surrounding area. However, given that the proposed project site is located within aboriginal territories of the Yocha Dehe Wintun Nation that fall within the Tribe's cultural interest and authority, **Mitigation Measure TCR-1** requiring cultural sensitivity training and setting handling protocols for inadvertent discovery of tribal cultural resources has been included at the Tribe's request. Therefore, the proposed project would have a less-than-significant impact with mitigation.

> **Mitigation Measure TCR-1: Cultural Sensitivity Training and Protocols.** Prior to the initiation of construction, all construction and project personnel shall be trained by a representative of the Yocha Dehe Wintun Nation regarding the recognition of possible buried cultural resources (i.e., prehistoric and/or historical artifacts, objects, or features) and protection of cultural resources during construction. Training shall inform all construction personnel of the procedures to be followed upon the discovery of cultural materials or human remains. Human remains with the Yocha Dehe Wintun Nation determined to be the MLD shall be handled following standards identified in the *Treatment Protocol for Handling Human Remains and Cultural Items Affiliated with the Yocha Dehe Wintun Nation (*See **Appendix F** of this Initial Study*)*. All personnel shall be instructed that unauthorized removal or collection of artifacts is a violation of State law.

References

ECORP Consulting, Inc. (ECORP). *Cultural Resources Inventory Report.* January 3, 2020.

UTILITIES AND SERVICE SYSTEMS

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
19.	**UTILITIES AND SERVICE SYSTEMS — Would the proposed project:**				
a)	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b)	Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c)	Result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d)	Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e)	Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion

a, b) **Less-than-Significant Impact.** The existing operation uses a private non-transient non-community (NTNC) water system, which includes one domestic well and another well for fire protection. The proposed project would not increase water use onsite. Therefore, the proposed project would result in a less-than-significant impact.

c) **No Impact.** The proposed project would not increase wastewater generated at the project site or alter the existing onsite septic system. Therefore, the proposed project would result in no impact.

d, e) **No Impact.** Construction of the proposed project would generate a negligible amount of solid waste. The proposed project would comply with all federal, state and local statutes and regulations related to solid waste. The Yolo County Central Landfill would not be impacted by the negligible amount of

solid waste generated by the proposed project. Therefore, the proposed project would result in a less-than-significant impact.

WILDFIRE

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
20. WILDFIRE — If located in or near state responsibility areas or lands classified as very high hazard severity zones, **would the proposed project:**				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

Background

The project site is not located in a State Responsibility Area. The closest State Responsibility Area is approximately one mile west of the project site. Fire season in Yolo County runs from May through October. Dry vegetation during this time period provides fuel for fires and can be exacerbated by hot north winds during periods of extremely low humidity. The County and municipalities do fight a large number of vegetation fires primarily along highways and roadways. Local fire stations are responsible for their districts, and CAL FIRE has equipment and staff available in Yolo County during the fire season (Yolo County, 2009). Winters FPD has a fire station located roughly 2.5 miles southwest of the project site.

Discussion

a) **Less-than-Significant Impact**. The Fire Safety and Prevention Plan, **Appendix E** to this Initial Study, includes standard sound fire prevention practices and serves as an ongoing operational guide for the facility. The proposed project improvements are aimed to meet the County's fire safety requirements and to improve storage areas to keep stored hay dry as wet hay poses a greater fire risk. The proposed project would reduce the need for fire protection services at the project site. The proposed project would also improve emergency vehicle accessibility at the project site through creating new internal access

roads and widening existing internal access roads. The proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan. Therefore, the proposed project would result in a less-than-significant impact.

b) **Less-than-Significant Impact.** As discussed in a) above, the proposed project would improve fire safety and reduce fire risk at the project site. The proposed project would reduce the potential for occupants of the project site to be exposed to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Therefore, the proposed project would result in a less-than-significant impact.

c) **Less-than-Significant Impact.** The proposed project would improve emergency vehicle accessibility at the project site through creating new internal access roads and widening existing internal access roads. The internal access road improvements would reduce fire risk onsite and would not result in impacts to the environment. Therefore, the proposed project would result in a less-than-significant impact.

d) **Less-than-Significant Impact.** The project site is located on flat and stable soil. The project site is already developed with the existing facility and the proposed project improvements would not include any structures intended for human occupancy. Tent barns, if constructed over existing storage pads, would be designed, engineered, and built in accordance with applicable standards. The proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides Therefore, the proposed project would result in a less-than-significant impact.

References

Board of Forestry and Fire Protection, *State Responsibility Area Viewer*, https://bof.fire.ca.gov/projects-and-programs/state-responsibility-area-viewer/

MANDATORY FINDINGS OF SIGNIFICANCE

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
21. MANDATORY FINDINGS OF SIGNIFICANCE — Would the proposed project:				
a) Have the potential to substantially 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) 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) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Discussion

a) **Less-than-Significant Impact with Mitigation.** The proposed project would involve temporary ground disturbances to the project site. With implementation of **Mitigation Measures HYD-1** and **TCR-1**, impacts to hydrology and tribal cultural resources would be less than significant so that the proposed project would not have the potential to substantially 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. Therefore, the proposed project would result in less-than-significant impacts with mitigation incorporated.

b) **Less-than-Significant Impact**. The proposed project would have no significant cumulative impacts. The proposed project would require temporary construction activities for improvements but would not change existing operational activities at the project site. Therefore, the proposed project would result in a less-than-significant impact.

c) **Less-than-Significant Impact**. The proposed project would not result in impacts to human beings that would result in substantial adverse effects on human beings, directly or indirectly. Therefore, the proposed project would result in a less-than-significant impact.

Appendix A
Air Quality Calculations

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> HayKingdom Improvements

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	1.99	15.50	19.79	10.87	0.87	10.00	2.89	0.81	2.08	0.03	3,348.46	0.98	0.03	3,381.77
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	1.99	15.50	19.79	10.87	0.87	10.00	2.89	0.81	2.08	0.03	3,348.46	0.98	0.03	3,381.77
Total (tons/construction project)	0.13	1.02	1.31	0.72	0.06	0.66	0.19	0.05	0.14	0.00	221.00	0.06	0.00	223.20

Notes:

Project Start Year ->	2021
Project Length (months) ->	6
Total Project Area (acres) ->	58
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	23	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> HayKingdom Improvements

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.13	1.02	1.31	0.72	0.06	0.66	0.19	0.05	0.14	0.00	221.00	0.06	0.00	202.48
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.13	1.02	1.31	0.72	0.06	0.66	0.19	0.05	0.14	0.00	221.00	0.06	0.00	202.48
Total (tons/construction project)	0.13	1.02	1.31	0.72	0.06	0.66	0.19	0.05	0.14	0.00	221.00	0.06	0.00	202.48

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model

Version 9.0.0

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	HayKingdom Improvements	
Construction Start Year	2021	Enter a Year between 2014 and 2040 (inclusive)
Project Type For 4: Other Linear Project Type, please provide project specific off-road equipment population and vehicle trip data	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	6.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	1.00	mile
Total Project Area	58.00	acres
Maximum Area Disturbed/Day	1.00	acre
Water Trucks Used?	1	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving		23.00	

Mitigation Options

On-road Fleet Emissions Mitigation		Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation		Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.00	0.60		1/1/2021
Grading/Excavation	6.00	2.70		1/1/2021
Drainage/Utilities/Sub-Grade	0.00	1.80		7/3/2021
Paving	0.00	0.90		7/3/2021
Totals (Months)		6		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing				0	0.00
Miles/round trip: Grading/Excavation				0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00
Miles/round trip: Paving				0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing				0	0.00
Miles/round trip: Grading/Excavation				0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00
Miles/round trip: Paving				0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions	User Override of Worker Commute Default Values	Default Values		
User Input				
Miles/ one-way trip			Calculated	Calculated
One-way trips/day			Daily Trips	Daily VMT
No. of employees: Grubbing/Land Clearing			0	0.00
No. of employees: Grading/Excavation			0	0.00
No. of employees: Drainage/Utilities/Sub-Grade			0	0.00
No. of employees: Paving			0	0.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)	0.02	1.10	0.10	0.05	0.02	0.00	339.80	0.00	0.01	342.28
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	1.18	2.95	0.34	0.00	0.00	0.00	72.81	0.08	0.04	85.39
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated	User Override of	Default Values	Calculated
User Input	Default # Water Trucks	Number of Water Trucks	Round Trips/Vehicle/Day	Round Trips/Vehicle/Day	Trips/day	Miles/Round Trip	Miles/Round Trip	Daily VMT
Grubbing/Land Clearing - Exhaust								0.00
Grading/Excavation - Exhaust								0.00
Drainage/Utilities/Subgrade								0.00
Paving								0.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)	0.04	0.42	3.06	0.11	0.05	0.02	1,779.29	0.00	0.28	1,862.69
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing			0.00	0.00	0.00	0.00
Fugitive Dust - Grading/Excavation			10.00	0.66	2.08	0.14
Fugitive Dust - Drainage/Utilities/Subgrade			0.00	0.00	0.00	0.00

Values in cells D195 through D228, D246 through D279, D297 through D330, and D348 through D381 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment

If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing	pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing	tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grading/Excavation Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
1.00			Model Default Tier	Aerial Lifts	0.04	1.09	0.60	0.01	0.01	0.00	162.62	0.05	0.00	164.37
1.00			Model Default Tier	Air Compressors	0.29	2.42	2.04	0.13	0.13	0.00	375.26	0.03	0.00	376.75
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Graders	0.45	1.77	5.92	0.19	0.17	0.01	641.68	0.21	0.01	648.60
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Off-Highway Trucks	0.61	3.60	5.26	0.19	0.18	0.01	1,278.52	0.41	0.01	1,292.29
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Plate Compactors	0.04	0.21	0.25	0.01	0.01	0.00	34.48	0.00	0.00	34.65
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Rollers	0.19	1.88	1.92	0.12	0.11	0.00	254.09	0.08	0.00	256.83
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Tractors/Loaders/Backhoes	0.37	4.52	3.79	0.22	0.21	0.01	601.80	0.19	0.01	608.28
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grading/Excavation	pounds per day	1.99	15.50	19.79	0.87	0.81	0.03	3,348.46	0.98	0.03	3,381.77
Grading/Excavation	tons per phase	0.13	1.02	1.31	0.06	0.05	0.00	221.00	0.06	0.00	223.20

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Drainage/Utilities/Sub-Grade	pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Paving	pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Emissions all Phases (tons per construction period) =>		0.13	1.02	1.31	0.06	0.05	0.00	221.00	0.06	0.00	223.20

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET

Appendix B
Biological Resources Assessment

TECHNICAL MEMORANDUM

TO: J.D. Trebec, Senior Planner, Yolo County Department of Community Services, Planning Division

FROM: Michael Bumgardner, Bumgardner Biological Consulting

SUBJECT: Yolo Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP) Compliance Associated with the Haykingdom, Inc. Conditional Use Project, 26888 County Road 90, Winters, CA

DATE: 9/9/2019

INTRODUCTION

This technical memorandum (TM) provides the results of planning level surveys for the site of the Haykingdom, Inc. Project (project) in Yolo County near the City of Winters, California (Figure 1). The Yolo Habitat Conservancy (Conservancy) has already completed an initial evaluation of the project site based on information from the Conservancy's most current database (available through Conservancy staff) and current aerial photos (see attached photograph from Google Earth). The initial assessment (i.e., land cover and covered species habitat assessment) can be completed at any time of year, but the assessment must be based on the most current data available at the time it is submitted. If the land cover is considered urban or built-up, a qualified biologist or a member agency staff member with the appropriate expertise may verify the land cover and this data may be used for the final land cover assessment. The Conservancy may also independently verify land cover as urban or built-up. For all other land cover types, a qualified biologist must verify the land cover and covered species habitat through a planning level survey. The Conservancy recommends this step if the applicant or planning staff are not certain whether the project is a covered activity or not. If the project is determined to not be a covered activity based on the land cover and covered species habitat assessment, then a planning level survey will not be needed. However, if the applicant and planning staff are reasonably certain the project is a covered activity, the Conservancy recommends conducting the planning level survey as early in the planning process as possible.

In addition to confirming the existing onsite land cover types, the planning level survey addressed the following:

- review of historic aerial photographs;

- review of habitat, special-status species, and wetland databases (both federal and state);
- a pre-site-survey analysis to assess the presence of suitable land covers that may support special-status species, migratory nesting birds, wetland habitats, or sensitive natural communities; and
- a site reconnaissance survey to assess the presence of active or dormant avian nests (in burrows and vegetation) within the 120-acre project site (consistent with the requirements of the Yolo County HCP/NCCP).

PROJECT SUMMARY

Haykingdom purchases, processes, stores, and exports more than 20 varieties of hay products to overseas locations using existing processing, storage, and office facilities established in 2002. The company operates on 120 acres of land on Assessor's Parcel Number (APN) #038-040-033 at 26888 County Road 90, Winters, California using approximately 58 acres of the parcel for processing and storage of hay and 62 acres of the parcel for growing hay. Project components addressed by Haykingdom's application for a county conditional use permit are only associated with the 58 acres of processing and storage (Figure 2). Proposed changes to the latter 58 acres include water system improvements such as a new well, hydrants, sprinklers, and associated piping and appurtenances at Compress Building 3; rearrangement of hay storage piles within the developed areas to meet fire safety requirements; maintenance resurfacing of existing storage pads and access roads as needed to restore elevations and drivability; and potential installation of tent barns within the footprint of the existing hay storage pads (consistent with the County's agricultural zoning).

Given that the Yolo Habitat Conservancy considers the project to be an agricultural economic development project, which is an HCP/NCCP covered activity, compliance with the Yolo County HCP/NCCP is required. In particular, the HCP/NCCP requires identification of the land covers and covered species habitats that are associated with the project. The 58 acres for processing and storing of hay is therefore further categorized as 2.2 acres of landscaping, 10.3 acres of hardscape, and 45.5 acres of barren ground for hay storage (based on calculations from the applicant's consultant - Broadbent Inc.). The project site is surrounded by County Road 90 and Interstate 505 to the east, orchard to the south, and the applicant's hay growing operations to the west and north.

RESEARCH AND SURVEY METHODS

All survey and research conducted for the project's planning level surveys was conducted by me (i.e., Michael Bumgardner). I am qualified by the Conservancy (i.e., ,on the Conservancy's approved list of biologists) to conduct such research and surveys given that I have been in the business as a consulting biologist since 1989 and much of my project history is in Yolo County and the surrounding counties. In addition, I am experienced with each of the covered wildlife species addressed by the HCP/NCCP.

Review of Historic Aerial Photographs

Google Earth photographs were utilized to assess land cover types and land use in the vicinity of the project site given that the project is located within the City of Winters and there is a substantial number of easily available aerial photographs dating back to 1993.

Review of Special-Status Species and Sensitive Natural Vegetation Communities

A review for documented occurrences of special-status species (including covered species) and sensitive natural communities was conducted through query of the California Natural Diversity Data Base (CNDDB) for occurrences within one mile of the project, query of the eBird data base for special-status birds (including covered species) within one mile of the project, and evaluation of modeled covered species habitat and occurrences of covered species presented in the species-specific figures of *Yolo Habitat Conservation Plan/Natural Community Conservation Plan Volume 2: Appendix A.*

Review of Wetland Data Bases

A search for available information related to onsite wetlands was limited to the United States Fish and Wildlife Services (USFWS) *National Wetlands Inventory Wetlands Mapper*. The Wetlands Mapper is designed to deliver easy-to-use, map-like views of wetland resources. It integrates digital map data along with other resource information to produce current information on the status, extent, characteristics, and functions of wetland, riparian, and deepwater habitats. The wetlands displayed on the Wetlands Mapper show wetland type and extent using a biological definition of wetlands. There is no attempt to define the limits of proprietary jurisdiction of any federal, state, or local government.

Planning Level Survey

Planning level surveys of the project site were conducted on August 2 and 16, 2019. Given the relatively small, unvegetated and uncomplicated area of the of the project site, it was surveyed via random meander transects. The onsite vegetated corridor was walked as an out and back linear transect focused on searching for active and inactive raptor nests. Weather conditions during the surveys were sunny with no overcast or clouds and with no to low winds (i.e., less than 2 mph as determined using the Beaufort scale). Air temperature was not measured but was warm.

Additional survey up to 1,320 feet outside of the project site was conducted where access could be obtained. Where access was not possible, lands within 1,320 feet were evaluated with Nikon Monarch 7 binoculars from the nearest point of legal access to determine the nearby land cover types, presence of covered species as well as other special-status species, and presence of sensitive vegetation communities. Lands outside of the project site were mostly addressed by vehicular windshield surveys from the dirt road that parallels the north, west, and south boundaries of the project site.

RESEARCH AND SURVEY RESULTS

Review of Historic Aerial Photographs

Visual analysis of available Google Earth photographs shows that there have been no substantial changes in the immediate area of the project since at least 1993 (other than the project). Land use on and adjacent to the project site has consisted strictly of agricultural uses. County Road 90 and Interstate 505 are the only adjacent non-agricultural cover types that have existed since 1993, but the land cover type east of these roads has also been associated with agricultural uses. As identified in the initial Conservancy evaluation for the project and confirmed by the subsequent planning level surveys, the land cover types within one mile of the project include the following: Developed (*Urban* or *Built-up*, *Vegetated Corridor*), Cultivated Lands Seminatural Community (*Field Crops, Grain/Hay Crops*), Other Agriculture (*Deciduous Fruits/Nuts, Vineyards*), Semi-agricultural/Incidental to Agriculture (*Semi-agricultural/Incidental to Agriculture*), Grassland (*Upland Annual Grasslands and Forbs*), Fresh Emergent Wetland (*Undetermined Alliance-Managed*), and Valley Foothill Riparian (*Mixed Fremont Cottonwood-Willow NFD Alliance*).

The predominant land cover type on the 58-acre project site (Figure 3) is Developed (*Urban* or *Built-up*) given that there is a large amount of hardscape and barren land used for processing and storage of hay. The remaining cover on the project site is Developed (*Vegetated Corridor*). It consists of a linear row of mature trees located along the eastern and southeastern perimeters of the project site (Figure 3).

Cultivated Lands Seminatural Community (*Field Crops, Grain/Hay Crops*) occurs on the remaining 62 acres of parcel #038-040-033 given that the land is dedicated to the production of Sudan grass (*Sorghum bicolor* x *S. bicolor* var. *sudanese*) (i.e., both a field and hay crop). However, this land is not considered part of the project.

Lastly, the Yolo HCP/NCCP requires an assessment of indirect effects from the project where there may be adverse impacts to covered species or covered species habitat outside of land that is permanently and directly affected by the project. The area of indirect effect for the project is defined as the area 50 feet from permanent (direct) effects of the project, but not extending beyond the boundary of parcel #038-040-033 (Figure 4).

Review of Special-Status Species and Sensitive Natural Vegetation Communities

The review of documented occurrences for special-status species (including covered species) within the threshold distances prescribed by Table 2-3 of the *Draft Yolo HCP/NCCP Implementation Handbook: Volume 1* (Permitting Guide) did not result in the identification of any nesting Swainson's hawk (*Buteo swainsoni*), white-tailed kite, or tricolored blackbird (*Agelaius tricolor*) occurrences on or immediately adjacent to the project site. Nor did the review identify any documented occurrences of other special-status species (including covered species) within or adjacent to the project site. However, the review found that suitable habitat for the above covered

species occurs adjacent to the project site and within the appropriate distance thresholds for the following species:

- Swainson's hawk - potential nesting habitat within 1,320 feet of project - linear row of mature native and non-native trees along County Road 90 and up to 1,320 feet south of the project site and single trees along the western project boundary (no active or known inactive nests).
- Swainson's hawk - potential hunting habitat within 1,320 feet of project - Sudan grass to the north and west of the project site as well as field crops and grassland/forbs east of County Road 90 and north of parcel #038-040-033.
- white-tailed kite - potential nesting habitat within 1,320 feet of project - linear row of mature native and non-native trees along County Road 90 and up to 1,320 feet south of the project site and single trees along the western project boundary (no active or known inactive nests).
- white-tailed kite - potential hunting habitat within 1,320 feet of project - Sudan grass to the north and west of the project site as well as field crops and grassland/forbs east of County Road 90 and north of parcel #038-040-033.
- tricolored blackbird nesting and foraging habitat within 1,300 feet of project - Sudan grass north and west of the project site (including portion of parcel #038-040-033 not within project site).

Unlike the Conservancy's review, my review found no evidence of habitat that could be occupied by burrowing owl within 500 feet of the project (e.g., California ground squirrel [*Otospermophilus beecheyi*] burrows or other similar subterranean refugia in open habitats with long line-of-site views of the surrounding land), though the species can occur in edge habitats that front onto otherwise unsuitable habitats when suitable underground refuge is available. In addition, ground squirrel populations are dynamic and can quickly colonize lands on which they previously did not occur. Therefore, there is approximately 1.4 acres of land within the project site (along the northeastern site perimeter) that is less disturbed and on which burrowing owls could be found in the future.

Review of Wetland Data Bases

The review of data bases regarding wetlands, if any, that occur on the project site was limited to the use of the Wetlands Mapper found in the USFWS *National Wetlands Inventory.* The use of the Wetlands Mapper resulted in no wetlands being identified for the project site. This finding is also supported by ground-truthing conducted during the planning level surveys of the project site on August 2 and 16, 2019.

Planning Level Survey

The planning level surveys of the project site found that the site supports only Developed (*Urban* or *Built-up*, *Vegetated Corridor*) cover types. Furthermore, the site is "landlocked" by other, similar agricultural uses. Adjacent cover type (within the area of indirect effect) that is suitable habitat for covered species is limited to the Cultivated Lands Seminatural Community (*Field Crops, Grain/Hay Crops*) cover type associated with the production of Sudan grass. This grass is suitable hunting habitat for Swainson's hawk and white-tailed kite when in its early growth stage (i.e., approximately one foot or less in height) and then later immediately after it is cut and harvested. It also occurs within 1,320 feet of potential nesting habitat. As such, a search for active Swainson's hawk and white-tailed kite nests was conducted within the *Vegetated Corridor* and the linear row of trees along the western project perimeter consistent with Avoidance and Minimization Measure (AMM) 16. A single large nest (unoccupied) was found in a tree along the western perimeter, but the nest is considered a corvid nest (most likely American crow [*Corvus brachyrhynchos*]) based on its size and configuration. No nests, active or inactive, were found in the *Vegetated Corridor* along the eastern and southeastern perimeter of the project site.

The adjacent Sudan grass is also considered suitable nesting and foraging habitat for tricolored blackbird. As such, a review of the existing data related to the species as well as a search for nesting colonies was conducted out to at least 1,300 feet from the project site concurrent with the Swainson's hawk and white-tailed kite planning level surveys. No evidence of nesting tricolored blackbirds was found. It should be noted that the nearest records for the species are from the Mariani Nut Processing Facility process water ponds along Buckeye Road more than 2,400 feet east-northeast of the project site. However, these eBird records do not appear to be associated with nesting birds. The nearest known nesting record is a California Natural Diversity Data Base (CNDDB) occurrence documented more than a mile southeast of the project site.

The planning level surveys were also extended out to 1,320 feet from the project boundaries (i.e., the prescribed proximity threshold for nesting Swainson's hawk and white-tailed kite) to address any evidence of adjacent covered species, covered species habitat or sensitive vegetation communities that occur within the prescribed proximity thresholds provided in Table 2-3 of the *HCP/NCCP Permitting Guide*. The offsite surveys found no evidence of covered species or nearby sensitive natural communities.

DISCUSSION

Any covered activity described in Chapter 3 (Covered Activities) of the HCP/NCCP, that occurs on developed land cover types (see Table 2-1 for land cover types classified as developed), as verified in the field, is exempt from the avoidance and minimization measures (AMMs) in Chapter 4 of the HCP/NCCP, unless the activity may do any of the following:

- affect covered species,
- affect mapped or unmapped stream, riparian, pond, or wetland land cover types,
- remove trees during the nesting season, or

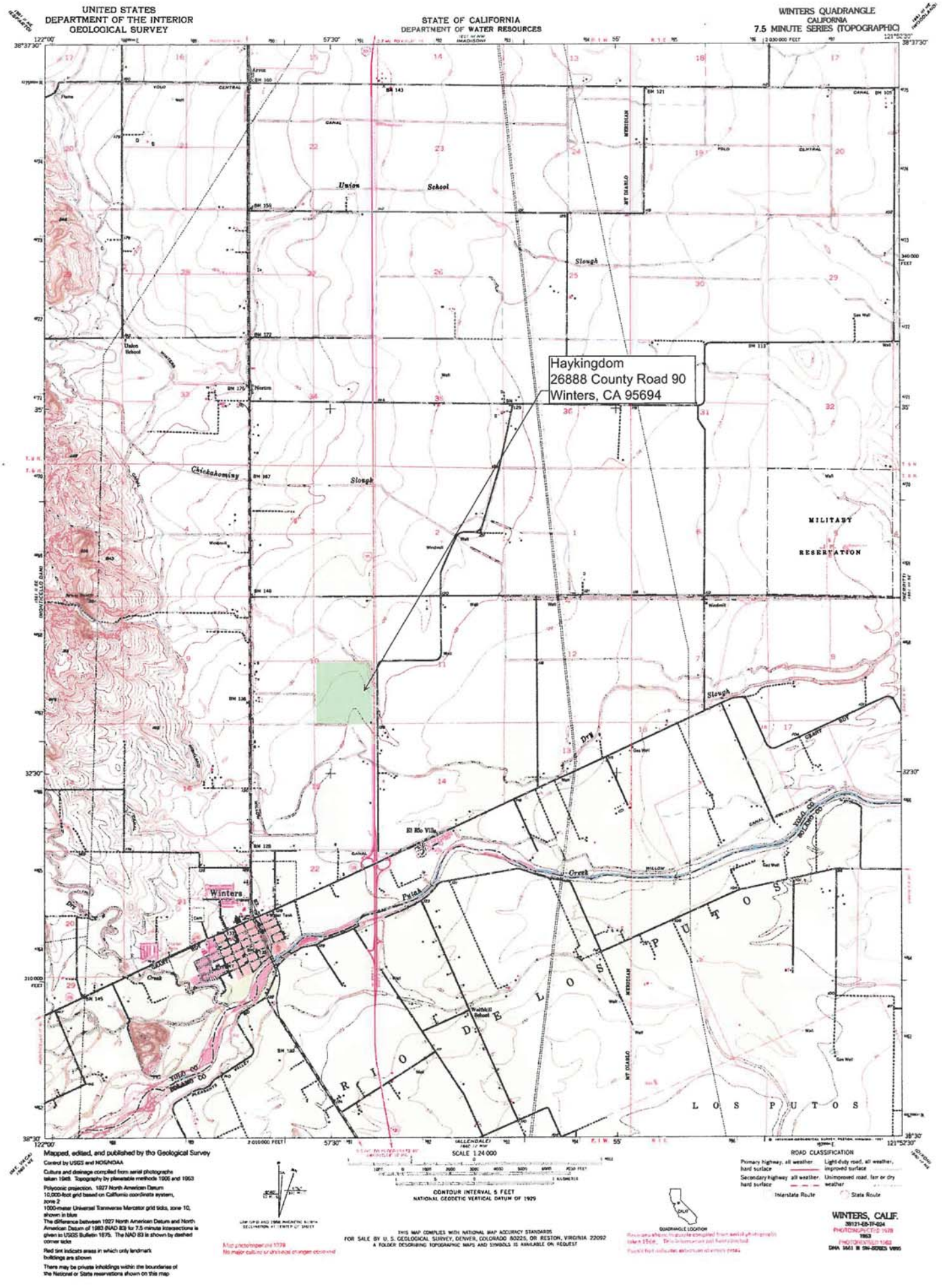
- occurs in a stream setback.

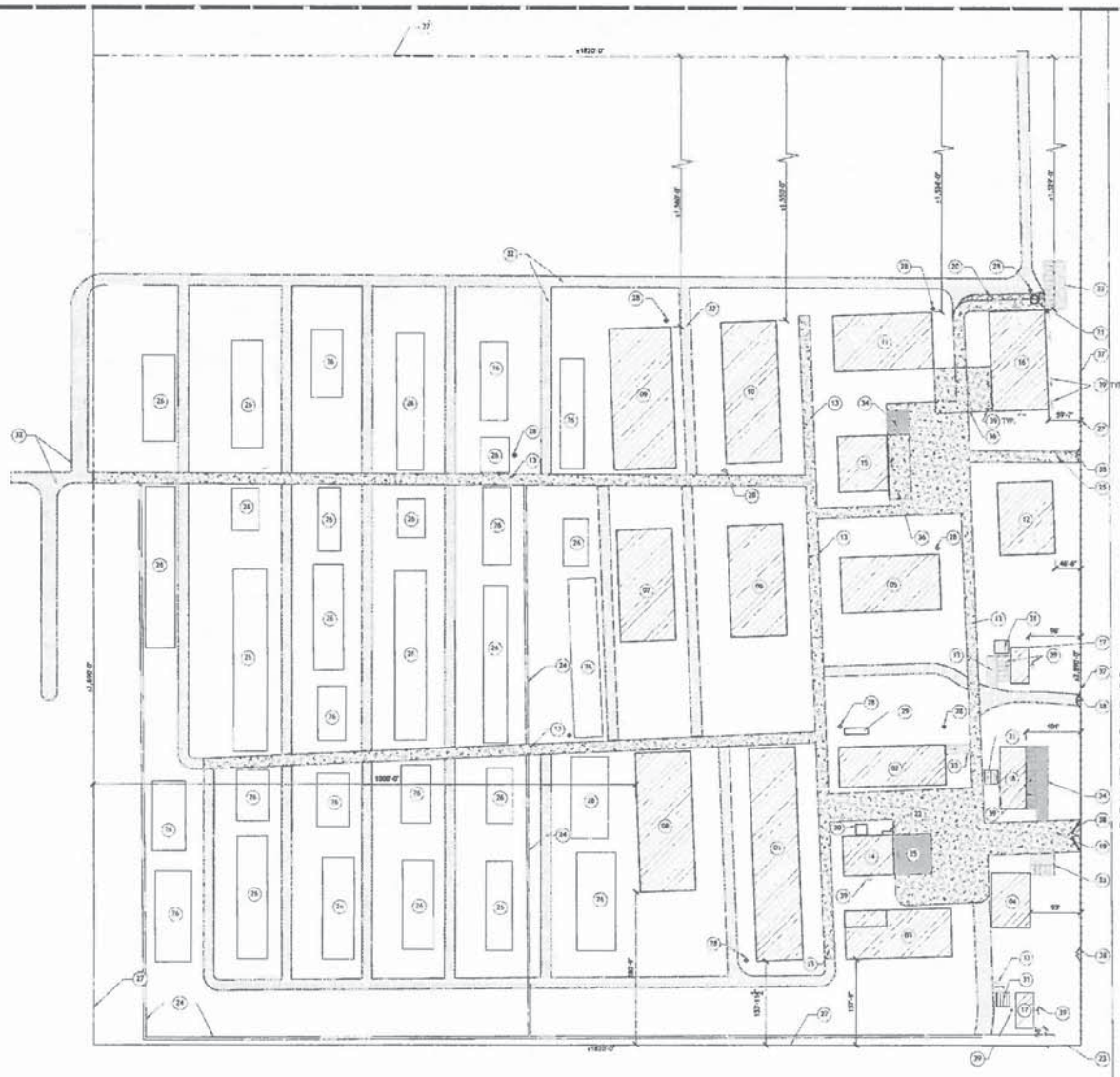
Therefore, given that the Haykingdom project is a covered activity, but occurs on a land cover type that is considered Developed (i.e., *Urban or Built-up*, *Vegetated Corridor*), the project would have no direct effects to covered species, sensitive land cover types, potential nest trees during the nesting season, or wetlands and their appropriate setback (with the following exceptions). However, the project could have indirect effects to potential hunting habitat for Swainson's hawk and white-tailed kite since there are potential nest trees for these covered species within 1,320 feet of the site (particularly in the *Vegetated Corridor* associated with the project site). AMM 16, for Swainson's hawk and white-tailed kite, is therefore applicable to the project should the project's conditional use permit not be issued until after March 15, 2020.

Sudan grass is potential nesting and foraging habitat for tricolored blackbird given that the species is known to nest in winter wheat (a structurally similar cover type). Therefore, AMM 21 is applicable to the project where suitable nesting habitat occurs within 1,300 feet of the project site. The AMM is applicable where Sudan grass or other suitable nesting habitat occurs, if the project's conditional use permit is not issued until after March 1, 2020.

No burrowing owls were found on the project site during the planning level surveys of the site. In addition, no habitat with existing burrows from California ground squirrel or other similar underground refugia were found during the planning level surveys of the project site. However, ground squirrels can quickly colonize an area. Thus, the less disturbed portion of the project site along the northeastern perimeter of the site could support burrowing owls in the future. AMM 18 is therefore applicable to the project and must be conducted within three days of breaking ground for the project.

Lastly, since the project borders on a land cover type (i.e., *Field Crops* or *Grain/Hay Crops*) that is a covered species habitat, it will be subject to current HCP/NCCP land cover fees associated with 4.3 acres of indirect effect. These fees, under the 2019 fee evaluation, total $60,342.00 (i.e., 4.3 acres x $14,033.00 per acre of indirect effect). In addition, the project will be subject to AMM 2 which addresses design development that minimizes indirect effects at urban-habitat interfaces.


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
WINTERS QUADRANGLE
CALIFORNIA
7.5 MINUTE SERIES (TOPOGRAPHIC)
Haykingdom
26888 County Road 90
Winters, CA 95694
Union School
Slough
Chickahominy Slough
MILITARY RESERVATION
Winters
El Rio Villa
Putah Creek
Dry Slough
RIO DE LOS PUTOS
L O S P U T O S
SCALE 1:24 000
CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
ROAD CLASSIFICATION
WINTERS, CALIF.
39121-E8-TF-024
PHOTOREVISED 1978
PHOTOINSPECTED 1983



SITE PLAN 1

SCALE: 1" = 100'-0"

KEYNOTES

01 EXISTING HAY STORAGE 1	22 EXISTING EMERGENCY SHUT OFF
02 EXISTING HAY STORAGE 2	23 EXISTING STORM CULVERT
03 EXISTING HAY STORAGE 3	24 EXISTING DRAIN DITCH
04 EXISTING HAY STORAGE 4	25 EXISTING NORTH ENTRANCE
05 EXISTING HAY STORAGE 5	26 EXISTING HAYSTACK
06 EXISTING HAY STORAGE 6	27 EXISTING PROPERTY LINE
07 EXISTING HAY STORAGE 7	28 EXISTING FIRE HYDRANT
08 EXISTING HAY STORAGE 8	29 EXISTING 22,000 GAL WATER TANK
09 EXISTING HAY STORAGE 9	30 EXISTING DOMESTIC WELL
10 EXISTING HAY STORAGE 10	31 EXISTING SEPTIC/LEACH FIELD
11 EXISTING HAY STORAGE 11	32 EXISTING COMPACT DIRT ACCESS ROUTE
12 EXISTING HAY STORAGE 12	33 EXISTING DIRT PARKING AREA
13 EXISTING 20'-0" WIDE INTERNAL ROAD PAVED/GRAVEL SURFACE	34 EXISTING PAVED PARKING AREA
14 EXISTING COMPRESS BUILDING 1 A= 6,940 SF	35 EXISTING PAVED LOADING AREA
15 EXISTING COMPRESS BUILDING 2 A= 9,350 SF	36 EXISTING PAVED/GRAVEL SURFACE LOADING AREA
16 EXISTING COMPRESS BUILDING 3 A= 18,800 SF	37 EXISTING CHAIN LINK FENCE
17 EXISTING WATCH HOUSE A= 2,170 SF	38 EXISTING GATE
18 EXISTING OFFICE BUILDING A= 5,535 SF	39 EXISTING EXTERIOR LIGHTING
19 EXISTING MAIN ENTRANCE	
20 EXISTING ROCK PAD	
21 EXISTING WELL & FIRE PUMP	

NOTES:
1. ALL DIMENSIONS AND AREAS PROVIDED ARE APPROXIMATED BASED ON GOOGLE EARTH AERIAL 2016
2. DESIGNATED PARKING AREAS TOTAL 41 SPACES WITH ONE ACCESSIBLE SPACE

VICINITY MAP

ENGINEERING SEAL | LOGO

WRA
WATER, RENEWABLES & AGRICULTURE
Anastasia Miki, RCE 68433
212 N. 1st Ave. Suite 104
Sandpoint, ID 83864
VOX 208-818-7506

REVISION: | DATE

PROJECT

HAY KINGDOM WINTERS

APN: 038-040-033 AREA = 120 ACS.
16488 COUNTY ROAD 90, WINTERS, CA 95694

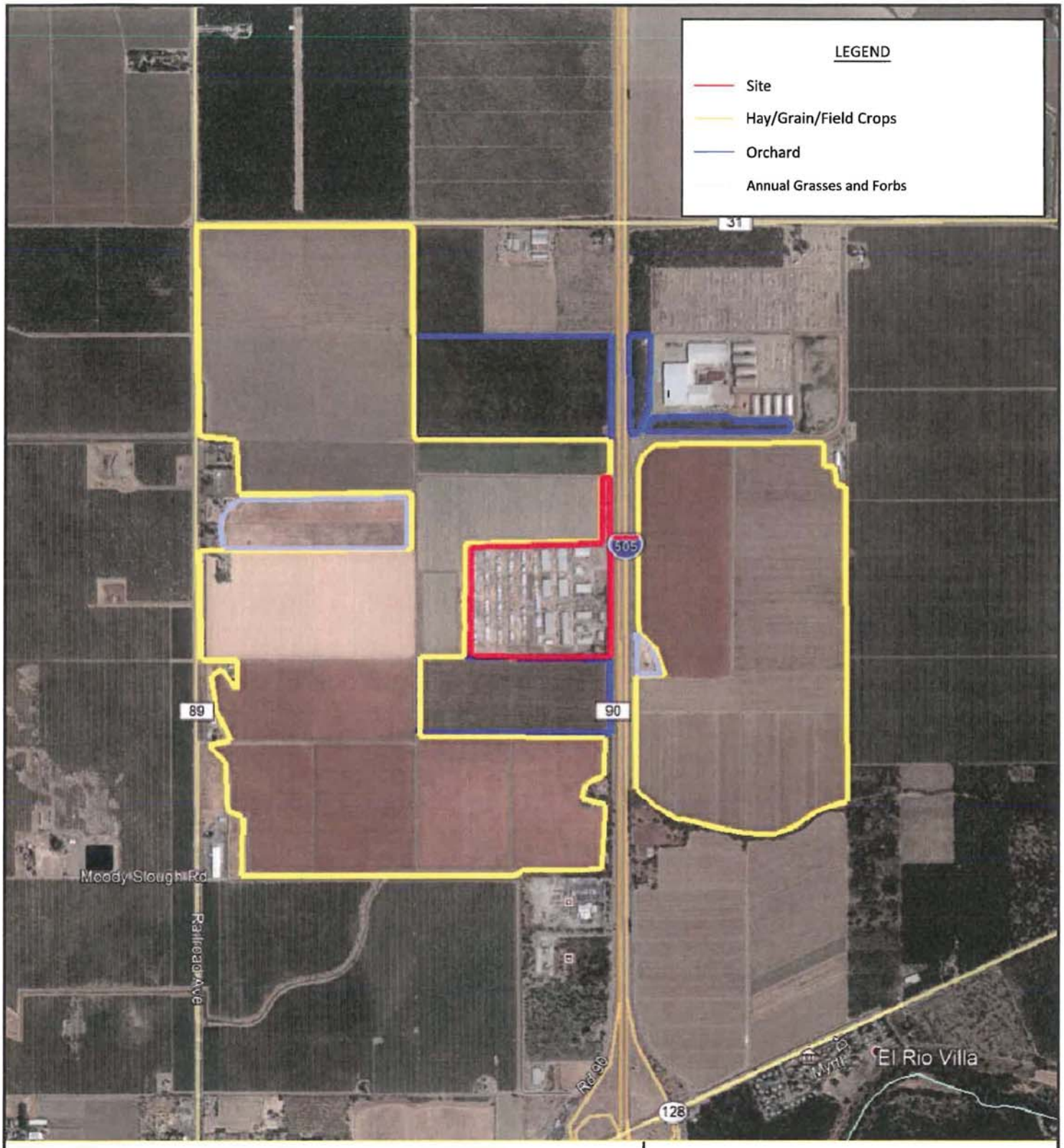
DRAWING

SITE PLAN

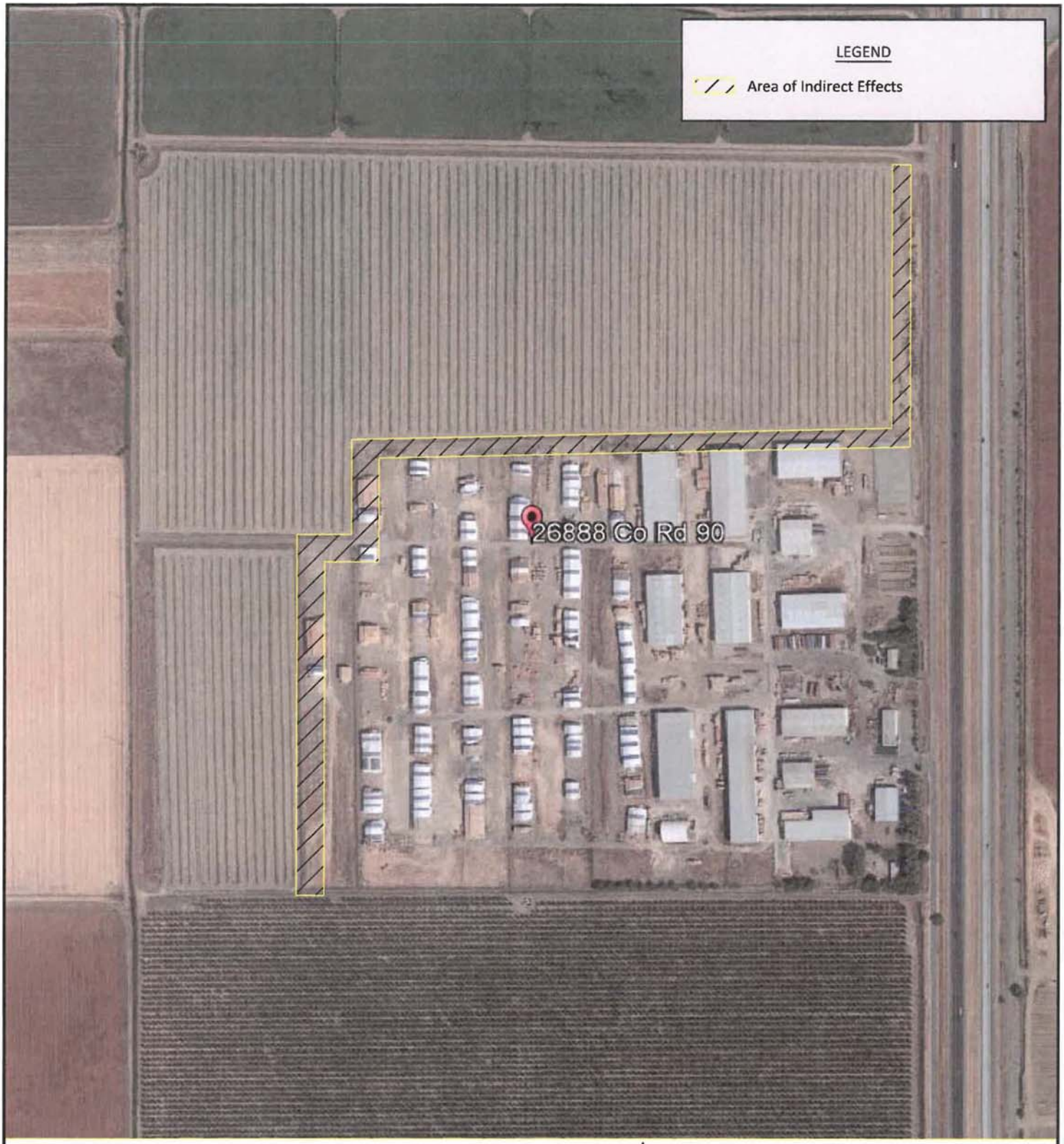
UPDATED AUG 12 2019

PROJECT SHEET DATA	AGENCY APPROVAL
JOB NO. 2018.07	
SCALE AS NOTED	
DATE 07.25.19	
DRAWN BY: MEG	
CHECKED BY:	DATE:

SHEET
A 1.1
TOTAL SHEETS
1 SHEET



BROADBENT 1370 Ridgewood Dr., Suite 5 Chico, California 95973 Project No.: 19-10-109 Date: 9/06/2019	Haykingdom 26888 County Road 90 Winters, CA 95694	Land Cover Types On and Adjacent to Project Site	Figure 3



BROADBENT 1370 Ridgewood Dr., Suite 5 Chico, California 95973 Project No.: 19-10-109 Date: 9/09/2019	Haykingdom 26888 County Road 90 Winters, CA 95694	Area of Indirect Effects for the Project	Figure 4

1A COVERAGE SCREENING FORM FOR PRIVATE PROJECTS

Yolo Habitat Conservation Plan / Natural Community Conservation Plan

PURPOSE OF THIS FORM

Complete Form 1A to help determine if a private project requires coverage under the Yolo Habitat Conservation Plan/Natural Community Conservation Plan (Yolo HCP/NCCP). If Form 1A results in a determination that the project requires coverage, complete Form 2 to provide preliminary information about estimated fees and potential avoidance and mitigation measures that may apply to the project. Form 3 is the formal application for coverage. Form 1A and Form 2 are for informational purposes and are not applications for permit coverage.

RESOURCES YOU WILL NEED TO COMPLETE THIS FORM

Yolo HCP/NCCP Permitting Guide, Chapter 5
www.yolohabitatconservancy.org/documents/permitguide

initial evaluation from the Yolo Habitat Conservancy (Conservancy) or completed planning-level survey
If a planning-level survey has not already been completed, please submit the project information on the first page of this form along with a shapefile or kml file of the project site to the Yolo Habitat Conservancy and request an initial evaluation. The initial evaluation will provide information needed to complete the rest of this form.

BOX A: PROJECT INFORMATION		
1 Project Name	Haykingdom Processing & Storage Improvements Project	
2 Project address and assessor's parcel number(s) (APNs)	26888 County Road 90, Winters, CA 95694 APN #038-040-033	
3 Briefly describe the proposed activity/development that will result in any site disturbance/activity/development that would result in **ongoing/permanent impacts** and any physical changes to the existing features, vegetation, or land, including any site preparation or construction activities that would result in **temporary impacts** on the project site (e.g., temporary work areas, staging areas, installation of subsurface utilities). Please see Chapter 5 of the Permitting Guide for information about details to include in this summary. Project components addressed by Haykingdom's application for a county conditional use permit are only associated with the existing 58 acres of processing and storage facilities. Proposed changes to the 58 acres include water system improvements such as a new well, hydrants, sprinklers, and associated piping and appurtenances at Compress Building 3; rearrangement of hay storage piles within the developed areas to meet fire safety requirements; maintenance resurfacing of existing storage pads and access roads as needed to restore elevations and drivability; and potential installation of tent barns within the footprint of the existing hay storage pads (consistent with the County's agricultural zoning).		
4 Does your project/activity require a discretionary approval/permit? (e.g., a general plan amendment, rezoning, use permit, variance, or land division)	☒ Yes, my project/activity requires a discretionary approval/permit (if you are not sure, ask the local jurisdiction with approval authority, e.g., City or County planning office)	☐ No, the approval/permit required for my project/activity is ministerial (e.g., a building permit, certain site/design reviews, certain license approvals) (*Go to* ***Box C, Item 2***)
5 Check applicable local jurisdiction	☒ Yolo County ☐ City of Davis ☐ City of West Sacramento	☐ City of Winters ☐ City of Woodland ☐ Other _____

BOX B: SCREENING QUESTIONS

1	Is the project/activity proposed entirely on land mapped as "developed" **AND** does not overlap with covered species habitat buffers identified in Table 2-3 of the Permitting Guide? (If a planning-level survey has yet to be conducted, contact the Conservancy to request an initial assessment)	☐ **Yes**. *Go to **Box C, Item 2*** ☒ **No**. *Go to Item 2.*
2	Is any part of your project/activity proposed on land cover types other than "developed"? (If a planning-level survey has yet to be conducted, contact the Conservancy to request an initial assessment)	☐ **Yes**. *Go to Box C, Item 1* ■ **No**. *Go to Item 3.*
3	Does the project overlap with any sensitive natural community or covered species habitat buffers identified in Table 2-3 of the Permitting Guide? (If a planning-level survey has yet to be conducted, contact the Conservancy to request an initial assessment)	■ **Yes**. *Go to **Item 4**.* ☐ **No**. *Go to **Box C, Item 2**.*
4	Can your project be designed so that activities do not occur near sensitive natural communities or covered species habitat as listed in Table 2-3 of the Permitting Guide, or have surveys by a qualified biologist shown that they are not present?	☐ **Yes**. *Redesign your project to avoid sensitive natural communities and covered species habitats or provide a survey report to the local planning/building office that shows there are no sensitive natural communities or covered species habitat within the distances described in Permitting Guide Table 2-3. Go to Box C, Item 2.* ■ **No**. *Go to Box C, Item 1.*

BOX C: CONCLUSIONS AND FORM SUBMITTAL INSTRUCTIONS

1 ■ Your project/activity does require coverage under the Yolo HCP/NCCP.

- Complete ***Items in Box D***.
- Complete **Form 2: Preliminary Evaluation of Fees and Conditions Form for Private Projects**.
- Submit both Form 1A and Form 2 as soon as possible to the planning office of the local jurisdiction with approval authority (see contact information below).

2 ☐ Your project/activity does not require coverage under the Yolo HCP/NCCP.

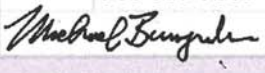
Note: The local agency with approval authority must confirm this conclusion following submittal of project information. Non-covered projects must comply with Federal and State Endangered Species Act requirements if applicable. If a project has the potential to take a federally or state-listed species, the applicant must contact the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and/or the California Department of Fish and Wildlife to determine whether a permit is necessary.

- Complete ***Items in Box D.***
- Submit Form 1A to the contact below. Note that a planning level survey report from an HCP/NCCP-approved qualified biologist that verifies the absence of sensitive natural communities and covered species habitats, including photos and aerials of the site, may be required to confirm that the project does not require coverage.
- If you desire "opt-in" coverage for your project as a Special Participating Entity, submit this form to the Conservancy office prior to completing **Form 3: Yolo HCP/NCCP Application Form for Private Projects**. Opt-in coverage is not guaranteed and will be authorized on a case-by-case basis by the Conservancy.

Are you requesting participation as a Special Participating Entity?: ☐ Yes. ☐ No.

BOX D: SIGNATURES

☒ **By checking the box and signing below I certify all information in the application is true and correct to the best of my knowledge.**

1	Property owner name and contact information			
		Phone	Email	
2	Property owner signature		Date	
3	Project Agent/ Applicant name and contact information	Michael Bumgardner (Bumgardner Biological Consulting)		
		Phone 916-638-7368	Email	michael.bumgardner@att.net
4	Project Agent/ Applicant signature		Date	09/06/2019

Permissions		
5	Local agency and/or the Conservancy may contact the property owner directly	☒ Yes ☐ No
6	Local agency and/or the Conservancy may contact the project agent/applicant directly	☒ Yes ☐ No

FORM SUBMITTAL INSTRUCTIONS

Submit this form as soon as possible in your project's development process to the applicable contact below. If the project applicant is seeking HCP/NCCP coverage as a Special Participating Entity then submit the form to the Yolo Habitat Conservancy. If the project requires HCP/NCCP coverage or is seeking coverage as a Special Participating Entity, **Form 2: Preliminary Evaluation of Fees and Avoidance and Minimization Measures for Private Projects** should also be submitted as soon as practical.

LOCAL PLANNING/BUILDING OFFICE CONTACT INFORMATION

Yolo County	**City of West Sacramento**	**City of Davis**	**City of Woodland**	**City of Winters**
Stephanie Cormier Charlie Tschudin Planning Division 292 West Beamer Street, Woodland (530) 666-8041 (530) 666-8850	David Tilley Community Development Department 1110 West Capitol Ave., 2nd Floor, West Sacramento (916) 617-4645	Katherine Hess Community Development & Sustainability 23 Russell Blvd., Suite 2, Davis (530) 757-5610 ext. 5652	Cindy Norris Planning Division 300 First Street, Woodland (530) 661-5911	Dagoberto Fierros Community Development Department 318 First Street, Winters (530) 794-6760

YOLO HABITAT CONSERVANCY CONTACT INFORMATION

Yolo County (for initial evaluation requests and Special Participating Entities)
Address: 611 North Street Woodland, CA 95695 Phone: 530-723-5504 Email: info@yolohabitatconservancy.org

FOR STAFF USE ONLY

☐ Covered	Project Planner		
☐ Not covered	Phone Number		
☐ No sensitive habitats onsite	Email		Date

2 PRELIMINARY EVALUATION OF FEES AND AVOIDANCE AND MINIMIZATION MEASURES FOR PRIVATE PROJECTS

Habitat Conservation Plan / Natural Community Conservation Plan

PURPOSE OF THIS FORM

Complete Form 2 only if Form 1A results in a determination that the project requires coverage under the Yolo HCP/NCCP. Completion of Form 2 will provide preliminary information about estimated fees and potential avoidance and minimization measures that may apply to the project. Applicants should use Form 2 as a guide, but not a final determination of fees and applicable avoidance and minimization measures. Applicants will determine final fees and measures based on planning surveys and field verification as part of Form 3, the formal application. Form 1A and Form 2 are for informational purposes and are not applications for permit coverage.

RESOURCES YOU WILL NEED TO COMPLETE THIS FORM

Yolo HCP/NCCP Permitting Guide, Chapter 6
www.yolohabitatconservancy.org/documents/permitguide

initial evaluation from the Yolo Habitat Conservancy (Conservancy) or completed planning-level survey
If a planning-level survey has not already been completed, please submit the project information on the first page of Form 1A along with a shapefile or kml file of the project site to the Yolo Habitat Conservancy and request an initial evaluation. A planning-level survey is required for the application (Form 3).

BOX A: COVERAGE SCREENING	
1 Per **Form 1A: Coverage Screening Form**, is Plan coverage required for your project/activity or do you intend to seek coverage as a Special Participating Entity?	■ **Yes.** *Go to Box B.* ☐ **No.** *Do not continue with this form; Yolo HCP/NCCP coverage is not required for your project, and Yolo HCP/NCCP fees and conditions do not apply.* Submit the Coverage Screening Form (Form 1A) to the appropriate local planning office (see bottom of form for addresses.)

BOX B: EVALUATION APPROACH	
2 Identify how land cover at the project's area of impact was determined for the purpose of completing this form.	☐ **Preliminary Land Cover and Covered Species Habitat Assessment** (i.e., initial evaluation) ☐ **Member agency land use planner** name:_____ *(For sites that are entirely on land defined as "urban or built up" as defined in Table 2-1 of the Permitting Guide.)* ☐ **Qualified biologist site visit** name:_____ ■ **Qualified biologist planning-level survey** (Attach survey when submitting Form)
2 Identify how potentially applicable AMMs were determined for the purpose of completing this form.	☐ **Preliminary Land Cover and Covered Species Habitat Assessment** (i.e., GeoMapper and Aerial Photography) ☐ **Based on current understanding of the project site and using definitions in Table 2-2 and distances identified in Table 2-3 of the Permitting Guide to identify AMMs that may apply** ■ **Qualified biologist planning-level survey** (Attach survey when submitting Form)

BOX C: NATURAL COMMUNITY AND LAND COVER IMPACTS AND MITIGATION FEES

Complete Items 1-26 below, referring to the Permitting Guide for calculation methods;

- Total fee amount per each land cover type will be auto generated after acreage amount, and years for temporary impacts (if applicable), are inserted in the respective table cells
- Temporary Impact Fee Formula = Land Cover Fee x area of temporary effect in acres x (F/50) where F = the number of years in which the activity will occur during the rest of the permit term (until 2069).
- Projects must include an indirect effect buffer area for the project, as described in Chapter 6 of the Permitting Guide.
- Fees will be updated annually in March.

	Land Cover Types	Land Cover Permanently Impacted by Project (in acres)	Land Cover Temporarily Impacted by Project (in acres)	Years of Temporary Impact	Fees (Auto Generated)			Total (Auto Generated)
					Land Cover & Wetland Fee (per acre)	Permanent Impact Fee	Temporary Impact Fee	
1	■ Developed[1]				$0	$	$	$ 0
2	☐ Barren, No Covered Species Habitat				$0	$	$	$
3	☐ Barren, With Covered Species Habitat				$14,033	$	$	$
4	☐ Vegetated Corridor with Giant Garter Snake Habitat				$14,033	$	$	$
5	☐ Grassland (all types)				$14,033	$	$	$
6	☐ Serpentine (all types)				$14,033	$	$	$
7	☐ Chamise (all types)				$14,033	$	$	$
8	☐ Mixed Chaparral				$14,033	$	$	$
9	☐ Oak-Foothill Pine (all types)				$14,033	$	$	$
10	☐ Blue Oak Woodland				$14,033	$	$	$
11	☐ Closed-Cone Pine-Cypress (all types)				$14,033	$	$	$
12	☐ Montane Hardwood (all types)				$14,033	$	$	$
13	☐ Valley Oak Woodland				$14,033	$	$	$
14	☐ Alkali Prairie				$14,033	$	$	$
15	☐ Vernal Pool Complex				$14,033	$	$	$
16	☐ Fresh Emergent Wetland (all types)				$88,082	$	$	$
17	☐ Valley Foothill Riparian				$96,042	$	$	$

BOX C: NATURAL COMMUNITY AND LAND COVER IMPACTS AND MITIGATION FEES

Complete Items 1-26 below, referring to the Permitting Guide for calculation methods;

- Total fee amount per each land cover type will be auto generated after acreage amount, and years for temporary impacts (if applicable), are inserted in the respective table cells
- Temporary Impact Fee Formula = Land Cover Fee x area of temporary effect in acres x (F/50) where F = the number of years in which the activity will occur during the rest of the permit term (until 2069).
- Projects must include an indirect effect buffer area for the project, as described in Chapter 6 of the Permitting Guide.
- Fees will be updated annually in March.

Land Cover Types	Land Cover Permanently Impacted by Project (in acres)	Land Cover Temporarily Impacted by Project (in acres)	Years of Temporary Impact	Fees (Auto Generated)			Total (Auto Generated)
				Land Cover & Wetland Fee (per acre)	Permanent Impact Fee	Temporary Impact Fee	
18 ☐ Lacustrine and Riverine				$73,420	$	$	$
19 ☐ Cultivated Land (Rice/ Row Crops/Pasture)				$14,033	$	$	$
20 ☐ Citrus/Subtropical				$14,033	$	$	$
21 ☐ Deciduous Fruits/Nuts				$14,033	$	$	$
22 ☐ Vineyards				$14,033	$	$	$
23 ☐ Turf Farm				$14,033	$	$	$
24 ☐ Flowers/Nursery/ Tree Farms				$14,033	$	$	$
25 ☐ Semiag/Incidental to Agriculture				$14,033	$	$	$
26 ☐ Eucalyptus				$14,033	$	$	$
27 ■ Area of impact buffer	4.3			$14,033	$60,342	$	$60,342
28 **ESTIMATED TOTAL LAND COVER IMPACTS AND MITIGATION FEES** (This is just an estimate. Fee payment is not due until the application (Form 3) is submitted.)						$	

[1] Exception - land cover fees may be applicable if covered species habitat is present, as defined in Table 2-2 of the Permitting Guide.

29 In lieu of payment of a portion of land cover and/or wetland fee an applicant may convey a land owned by the applicant (either part of the development site or separate from the development site) or credits from a Conservancy-approved mitigation receiving site. Land proposed in lieu of fee payment must meet the Conservancy's reserve system requirements and is subject to Conservancy and wildlife agency approval. Please refer to the Permitting Guide for more information.

Does the applicant intend to request the use of land in-lieu of paying a portion of the land cover and/or wetland fee?

☐ **Yes**. Contact the Yolo Habitat Conservancy immediately to discuss your options for providing land or purchasing credits in lieu of fee payment.

■ **No**.

BOX D: PRELIMINARY IDENTIFICATION OF APPLICABLE AVOIDANCE AND MINIMIZATION MEASURES

Reminder: This form only provides a guide, not a final determination, of the avoidance and minimization measures applicable to your project/activity.

1 Refer to the Chapter 8 of the Permitting Guide for information about each measure's requirements and Chapter 7 for how to determine how to determine if measures apply to your project. Check the AMMs that apply to your project.

- ☐ AMM 1: *Establish Buffers*
- ■ AMM 2: *Design Developments to Minimize Indirect Effects at Urban-Habitat Interfaces* (this AMM does not apply to new development where it is immediately adjacent to existing developed lands)
- ☐ AMM 3: *Confine and Delineate Work Area*
- ☐ AMM 4: *Cover Trenches and Holes during Construction and Maintenance*
- ☐ AMM 5: *Control Fugitive Dust*
- ☐ AMM 6: *Conduct Worker Training*
- ☐ AMM 7: *Control Nighttime Lighting of Project Construction Sites*
- ☐ AMM 8: *Avoid and Minimize Effects of Construction Staging Areas and Temporary Work Areas*
- ☐ AMM 9: *Establish Buffers around Sensitive Natural Communities*
- ☐ AMM 10: *Avoid and Minimize Effects on Wetlands and Waters*
- ☐ AMM 11: *Minimize Take and Adverse Effects on Palmate-Bracted Bird's Beak*
- ☐ AMM 12: *Minimize Take and Adverse Effects on Habitat of Valley Elderberry Longhorn Beetle*
- ☐ AMM 13: *Minimize Take and Adverse Effects on Habitat of California Tiger Salamander*
- ☐ AMM 14: *Minimize Take and Adverse Effects on Habitat of Western Pond Turtle*
- ☐ AMM 15: *Minimize Take and Adverse Effects on Habitat of Giant Garter Snake*
- ■ AMM 16: *Minimize Take and Adverse Effects on Habitat of Swainson's Hawk and White-Tailed Kite*
- ☐ AMM 17: *Minimize Take and Adverse Effects on Habitat of Western Yellow-Billed Cuckoo*
- ■ AMM 18: *Minimize Take and Adverse Effects on Western Burrowing Owl*
- ☐ AMM 19: *Minimize Take and Adverse Effects on Least Bell's Vireo*
- ☐ AMM 20: *Minimize Take and Adverse Effects on Habitat of Bank Swallow*
- ☐ AMM 21: *Minimize Take and Adverse Effects on Habitat of Tricolored Blackbird*

BOX E: SIGNATURES

1 ■ **By checking the box and signing below I understand that the total fees in Box C and AMMs checked in Box D are estimates and subject to change until completion and approval of Form 3.**

2 Property owner name and contact information				
	Phone		Email	
3 Property owner signature			Date	

4	Agent/consultant name and contact information	Phone (916) 638-7368 Michael Bumgardner	Email	michael.bumgardner@att.net
5	Agent/consultant signature	Michael Bumgardner	Date	September 6, 2019
Permissions				
6	Local agency and/or the Conservancy may contact the Property Owner directly		■ Yes	☐ No
7	Local agency and/or the Conservancy may contact the Project Agent/Applicant directly		■ Yes	☐ No

FORM SUBMITTAL INSTRUCTIONS AND APPLICATION FEE PAYMENT

1 Submit this form along with **Form 1A: Coverage Screening Form for Private Projects** as soon as possible in your project's development process to the contact below.

2 **Application Fee Payment** This amount will be credited to the applicant as an advanced payment of a portion of HCP/NCCP land cover impact and mitigation fees when submitting a completed application and HCP/NCCP fee payment	☐ Check for $1,981 made out to the Yolo Habitat Conservancy is included in this submittal

LOCAL PLANNING/BUILDING OFFICE CONTACT INFORMATION

Yolo County Charlie Tschudin Planning Division 292 West Beamer Street, Woodland (530) 666-8850	**City of West Sacramento** David Tilley Community Development Department, 1110 West Capitol Ave., 2nd Floor, West Sacramento (916) 617-4645	**City of Davis** Sherri Metzker Community Development & Sustainability 23 Russell Blvd., Suite 2, Davis (530) 757-5610	**City of Woodland** Cindy Norris Planning Division 300 First Street, Woodland (530) 661-5911	**City of Winters** Dagoberto Fierros Community Development Department 318 First Street, Winters (530) 794-6760

YOLO HABITAT CONSERVANCY CONTACT INFORMATION

Website: www.yolohabitatconservancy.org
Address: 611 North Street Woodland, CA 95695
Phone: 530-723-5504
Email: info@yolohabitatconservancy.org

FOR STAFF USE ONLY			
Project Planner			
Phone Number			
Email		Date Received	

Appendix C
Hydrology Study

TECHNICAL MEMORANDUM – DRAFT

TO: Ms. Diane Kindermann Henderson, Abbott & Kindermann, Inc.

FROM: Mr. Cody L. Milligan, P.E., CFM, Wood Rodgers, Inc.
Mr. Mitch Berggren, EIT, Wood Rodgers, Inc.

SUBJECT: Hay Kingdom Inc. - Hydrology and Hydraulics Study

DATE: October 9, 2020

INTRODUCTION

Hay Kingdom Inc. (Hay Kingdom) is an existing hay processing and storage operation that stores bundled hay products for export. Hay Kingdom is currently pursuing improvements to its existing facility located west of County Road 90 and Interstate 505 (I-505) and north of Grant Avenue near the city of Winters (APN 038-040-33), and is in the process of finalizing a Conditional Use Permit application through the Yolo County Public Works Division (County). The proposed improvements (Project) include raising the grade of exterior hay storage pad, relocating and improving existing driveways and roads, and potentially constructing cover structures over some storage areas. The property drains to the south via an existing culvert during smaller storm events and overtops the unsurfaced road located at the southern border of the property during larger storm events. The location of the Project is shown in **Figure 1**.

BACKGROUND

By way of its Flood Insurance Rate Maps, the Federal Emergency Management Agency (FEMA) has mapped the Project site as being outside of a Special Flood Hazard Area (SFHA) in unshaded Zone X. FEMA uses unshaded Zone X to characterize areas determined to be outside of the 0.2% (500-year) annual chance flood. In 2017, Wood Rodgers, Inc. (Wood Rodgers) completed a drainage study for the City of Winters (City) and documented its findings in the report entitled: *City of Winters Existing Conditions Modeling Technical Memorandum - North and East Area*. This 2017 study was updated in 2020 in the *City of Winters Storm Drainage Master Plan - Northeast Area (Draft)* (SDMP Study), also prepared by Wood Rodgers. These two studies incorporated a more accurate analysis of flooding sources considered by previous FEMA mapping studies, and defined the extent of flooding in the region west of I-505 and north of the City (including the Hay Kingdom property) with greater accuracy. Flooding on the Hay Kingdom property results from significant out-of-bank flows under the 100-year event from both

Chickahominy Slough and Moody Slough. The currently-effective FEMA floodplain at the Project site is shown in **Figure 2**, and the floodplain based on the SDMP Study is shown in **Figure 3**.

PURPOSE

Hay Kingdom has been advised by the County that a hydrology and hydraulics study (Study) is required to accompany its application for the Conditional Use Permit. The County also advised that this Study must identify the 100-year floodplain using the most recent and best available data, and that the Study must demonstrate that the proposed improvements do not worsen flooding conditions at adjacent properties. Therefore, Hay Kingdom has contracted with Wood Rodgers to provide the required Study. The purpose of this Technical Memorandum (TM) is to document the data sources, methods, assumptions, and results of the required Study.

APPROACH

Modeling Tools

Wood Rodgers performed the Study using ArcGIS tools to analyze site topography and proposed improvements. Existing HEC-HMS hydrologic modeling and existing HEC-RAS hydraulic modeling developed for the SDMP Study were utilized as the basis for the modeling conducted in this Study, and a 100-year 24-hour storm was used as the basis of the analysis. In areas where existing floodplain storage is present (such as the agricultural-based land uses surrounding Hay Kingdom), the 100-year, 24-hour storm event represents a more conservative estimate of flooding than a 100-year, multi-day storm event (such as a 7-day or 10-day duration event).

Design Methodology

The process followed for this Study and the methodology used in the computer modeling evaluation for the analysis is outlined below:

1. Modify the existing SDMP Study HEC-RAS model to establish baseline conditions at the Hay Kingdom site. The baseline conditions include the site configuration and development as of June 2019. This date is used as it represents conditions to proposed improvements.

2. Update the baseline conditions HEC-RAS model with the proposed improvements at the Project site to reflect with-Project conditions.

3. Determine impacts to the baseline conditions floodplain associated with the proposed conditions.

4. Determine required drainage facilities for the post-development conditions so that potential increases in floodplain depths at adjacent properties are fully mitigated.

Datum and Projection

All elevations in this TM and the associated hydraulic modeling are referenced to the North American Vertical Datum of 1988 (NAVD 88) and use the California State Plane Zone 2 projected coordinate system.

HYDRAULIC ANALYSIS

Baseline Conditions

A topographic survey was flown by Radman Aerial Surveys in June 2019, and the survey was used to determine ground elevations at the Project site. This survey represents more recent and more detailed topographic mapping than the mapping used for the SDMP Study HEC-RAS model, and therefore was used for this Study. The Project site is located on relatively flat terrain that generally slopes from the north to the south at approximately 0.15 percent, and with elevations from elevation 126.0 (feet, NAVD 88) to elevation 132.0 (feet, NAVD 88). **Figure 4** shows the existing topography at the Project site as well as for the surrounding area. Soils and land use values used in the SDMP Study were reviewed and found to be consistent with those present within the Hay Kingdom site and therefore were not altered.

The baseline conditions modeling shows that the maximum water surface elevation at the Project site ranged from elevation 136.0 (feet, NAVD 88) in the northwest corner to elevation 129.2 (feet, NAVD 88) in the southeast corner. The maximum water depth was approximately 4.0 feet, with depths at low areas between hay storage pads typically under 3.0 feet. The baseline conditions 100-year 24-hour floodplain depths are shown on **Figure 5**. Digital copies of all HEC-RAS input and output files have been included in **Appendix B**.

With-Project Conditions

To represent with-Project conditions, the baseline conditions HEC-RAS model was updated to reflect future improvements to the Project site. These improvements include the relocation and raising of access roads, the construction of cover structures over hay storage pads, and the raising of the hay storage pads. A maximum of nine cover structures may be constructed using structural steel frames and tent fabric covering over the gravel-surface elevated hay storage pads. These proposed site improvements are shown on **Figure 6**.

In August 2019, R.E.Y. Engineers, Inc. (R.E.Y.) prepared a study for Hay Kingdom entitled: *Ponding & Overland Flow Analysis For: Hay Kingdom.* This study concluded that various pads where hay was being stored would need to be raised so that runoff could spill between or over existing internal roads before spilling into hay storage pads. These pad raises range in height from 6 to 17 inches. The with-Project conditions for the current study reflects the raising of all of the hay pads as described in the R.E.Y. study. The R.E.Y. study is attached as **Appendix A**.

A with-Project conditions HEC-RAS model was developed by Wood Rodgers to represent conditions at the site with the raised hay storage pad elevations, relocated roads, and additional cover structures. The cover structures are proposed to have tent fabric siding and were conservatively considered to completely block flow for modeling purposes. The with-Project conditions 100-year 24-hour floodplain depths are shown on **Figure 7**, and the difference in water surface elevation between the baseline conditions and with-Project conditions for the 100-year 24-hour storm event is shown on **Figure 8**. Digital copies of all HEC-RAS input and output files have been included in **Appendix B**.

Mitigation of With-Project Conditions

Potential mitigation for proposed site improvements could be made through a combination of the following three facilities, among other options currently being developed:

1. A proposed channel running through the Project site that is approximately 3,700 feet long with a depth of 3 feet, 3:1 side slopes, and a bottom width at a maximum of 12 feet.

2. Raising the area adjacent to an unsurfaced road located along the southern border of the Hay Kingdom property. The road is proposed to be raised between zero and four feet in order to achieve a minimum elevation of 131 (feet, NAVD 88) for approximately 1,300 feet beginning near the southwest corner of the Hay Kingdom property

3. Lowering an area measuring 65 feet in width and 90 feet in length adjacent to the hay storage pad located near the southwest corner of the site to elevation 130.1 (feet, NAVD 88). This elevation coincides with the elevation of the storage pad.

By raising the road and lowering the area adjacent to the hay storage pad, floodwaters are prevented from flowing south and are directed eastward in a fashion similar to baseline conditions at this location. The location of the channel, raised roadway, and area of degrade is shown on **Figure 9**. The mitigated with-Project conditions 100-year 24-hour floodplain depths are shown on **Figure 10**. The resulting difference in water surface elevation between the baseline condition and the mitigated with-Project condition for the 100-year 24-hour flooding event is shown on **Figure 11**. Digital copies of all HEC-RAS input and output files have been included in **Appendix B**. Hay Kingdom is continuing to develop alternative feasible mitigation options and will present those to the County if developed. Any alternative mitigation options will meet the design requirements equivalent to those described in this TM.

SUMMARY AND CONCLUSIONS

By constructing the facilities outlined in Figure 9, or alternative facilities to be developed that achieve the same level of mitigation, the proposed hay storage improvements to be constructed at the property can be fully mitigated such that no increases in floodplain depth will occur at properties adjacent to or downstream of the property and there will be less than significant drainage impacts as a result of the Project.

REFERENCES

1. Federal Emergency Management Agency (2010). *Federal Insurance Rate Map. Yolo County California and Incorporated Areas. Map Number 06113C0562G.* June 18, 2010.

2. R.E.Y. Engineers, Inc. (2019). *Ponding & Overland Flow Analysis For: Hay Kingdom.* August 2019.

3. United States Department of Agriculture, Natural Resources Conservation Service (2020). Web Soil Survey. Accessed from: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

4. Wood Rodgers, Inc. (2010). *Yolo County City/County Drainage Manual*. Prepared on behalf of the Flood Safe Yolo Pilot Program April 2009. Revised February 2010.

5. Wood Rodgers, Inc. (2017). *City of Winters Existing Conditions Modeling Technical Memorandum - North and East Area.* Prepared on behalf of the City of Winters March 2017.

6. Wood Rodgers, Inc. (2020). *City of Winters Storm Drainage Master Plan - Northeast Area (Draft).* Prepared on behalf of the City of Winters August 2018. Revised March 2020.

FIGURES

APPENDICES

FIGURES

Hay Kingdom Property Boundary

NORTH

0 250 500 1,000

Feet

HYDROLOGY AND HYDRAULIC STUDY for
HAY KINGDOM INC.

Project Location Map

YOLO COUNTY, CALIFORNIA
August, 2020

PRELIMINARY

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

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FIGURE 1

Hay Kingdom Property Boundary

1% Annual Chance Flood Hazard

NORTH

0 250 500 1,000

Feet

HYDROLOGY AND HYDRAULIC STUDY for
HAY KINGDOM INC.

FEMA Floodplain Map

YOLO COUNTY, CALIFORNIA
August, 2020

PRELIMINARY

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

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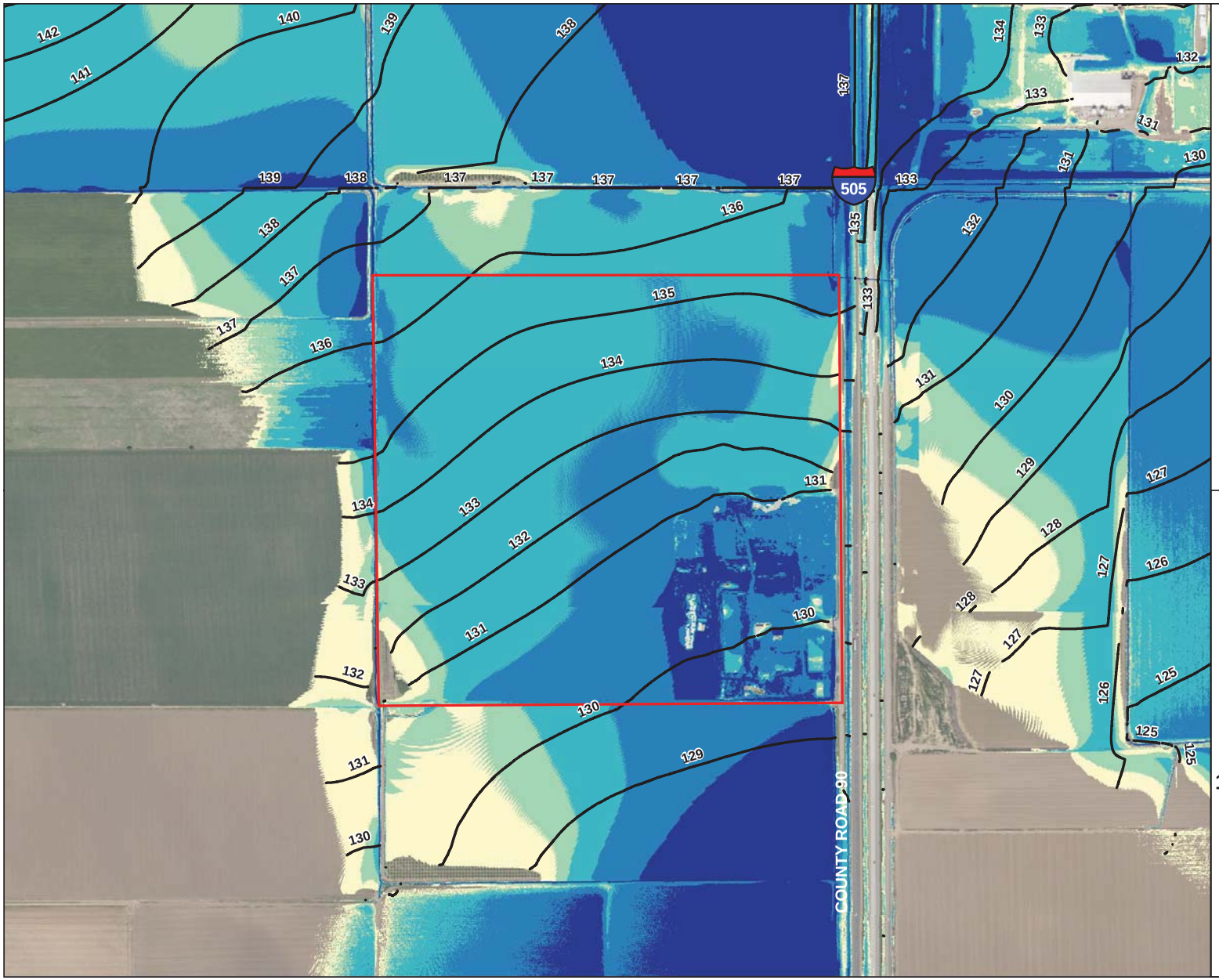
FIGURE 2



Hay Kingdom Property Boundary

Elevation (ft, NAVD 88)

100-Year 24-Hour Depth (ft):

- 0.0 - 0.25
- 0.25 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- > 2.0

NORTH

0 250 500 1,000

Feet

HYDROLOGY AND HYDRAULIC STUDY for
HAY KINGDOM INC.

City of Winters
Storm Drain Master Plan
100-Year 24-Hour Floodplain Map

YOLO COUNTY, CALIFORNIA
August, 2020

PRELIMINARY

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

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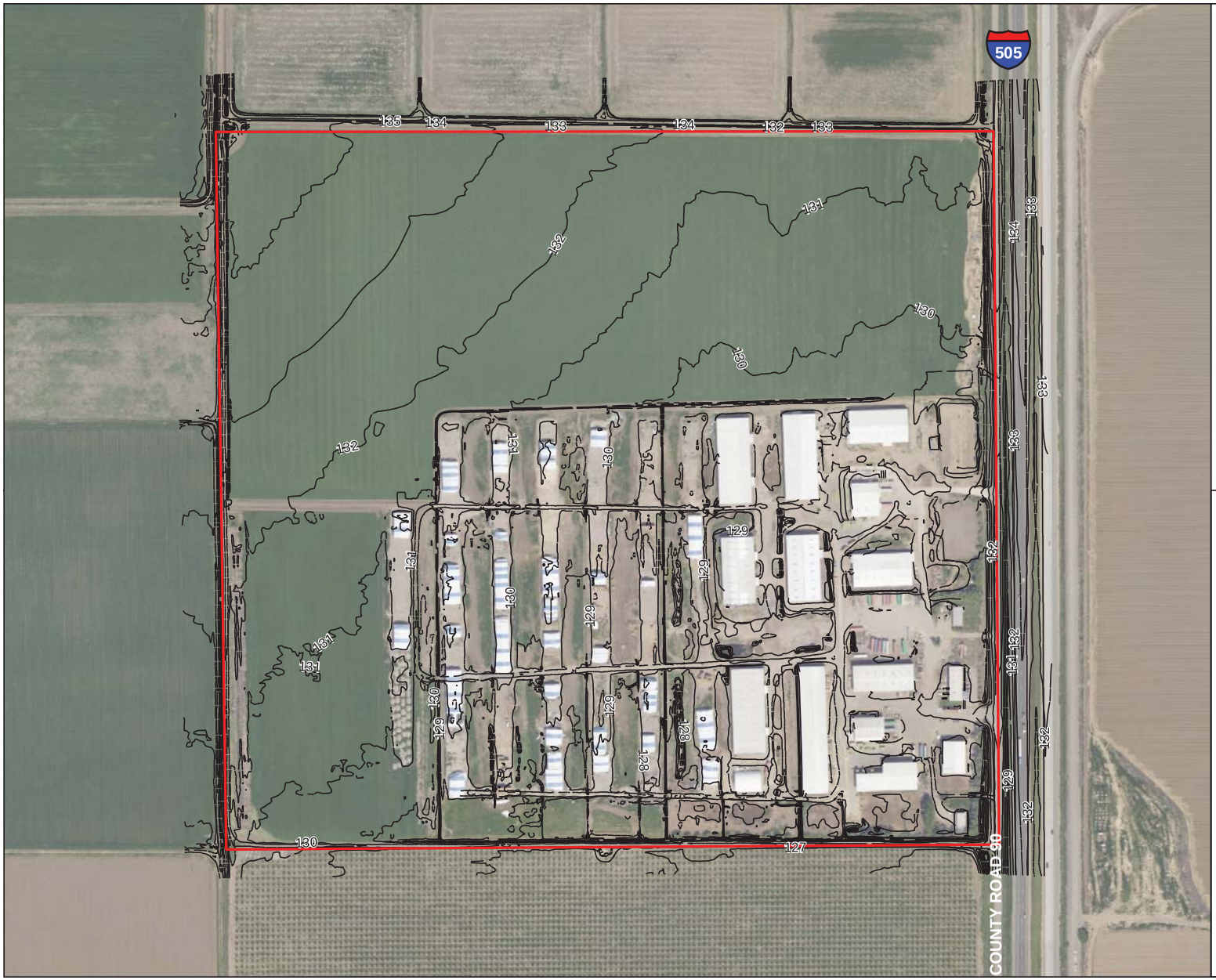
FIGURE 3



Hay Kingdom Property Boundary

Elevation (feet, NAVD-88)

NORTH

0 150 300 600

Feet

HYDROLOGY AND HYDRAULIC STUDY for
HAY KINGDOM INC.

On-Site Topography Map

YOLO COUNTY, CALIFORNIA
August, 2020

PRELIMINARY

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

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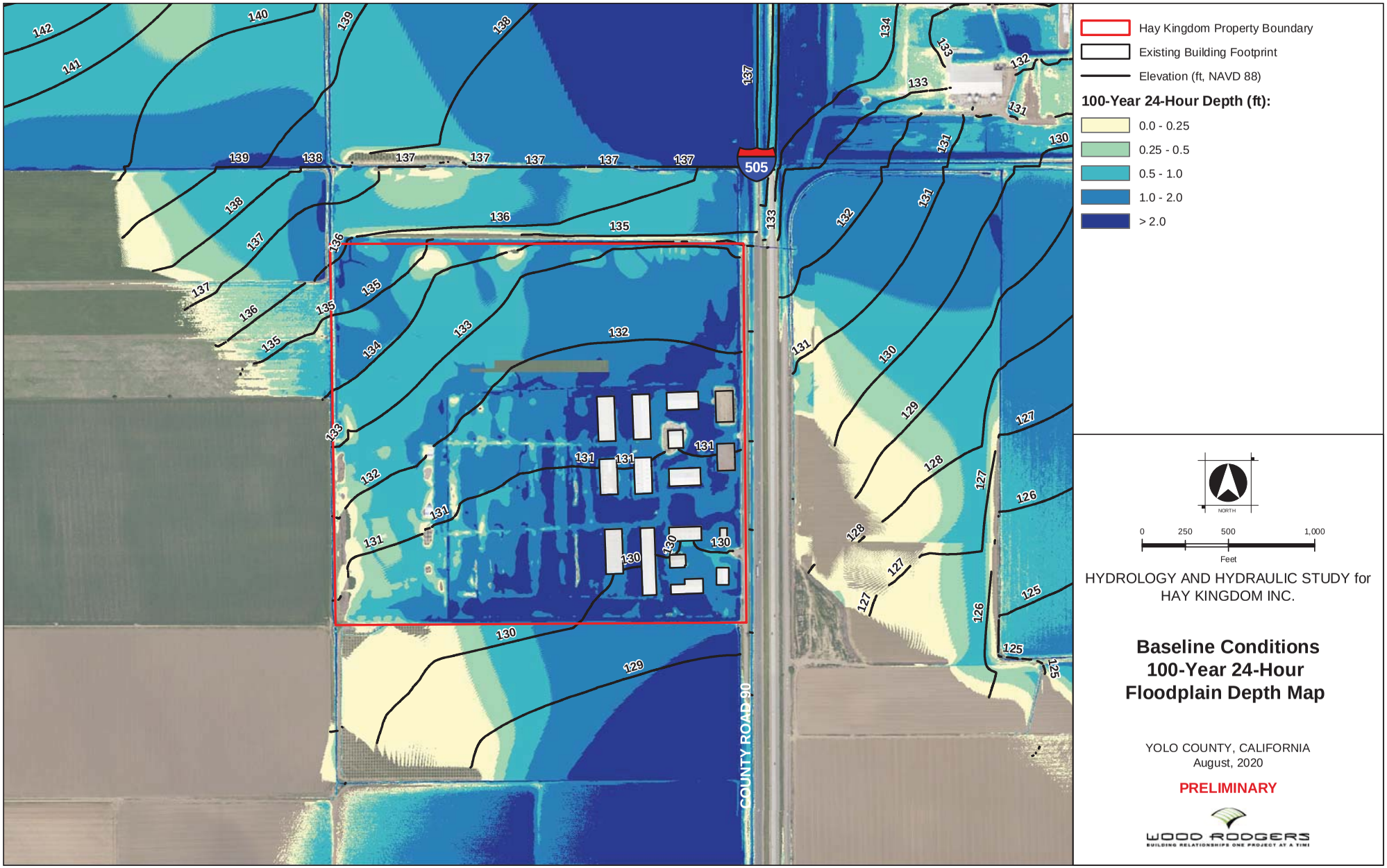
FIGURE 4



HYDROLOGY AND HYDRAULIC STUDY for
HAY KINGDOM INC.

Baseline Conditions 100-Year 24-Hour Floodplain Depth Map

YOLO COUNTY, CALIFORNIA
August, 2020

PRELIMINARY

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

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FIGURE 5

Hay Kingdom Property Boundary

Existing Building Footprint

Proposed Improvement:

Hay Pad

Road

Cover Structure

NORTH

0 150 300 600

Feet

HYDROLOGY AND HYDRAULIC STUDY for HAY KINGDOM INC.

Proposed Site Improvements Map

YOLO COUNTY, CALIFORNIA
August, 2020

PRELIMINARY

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

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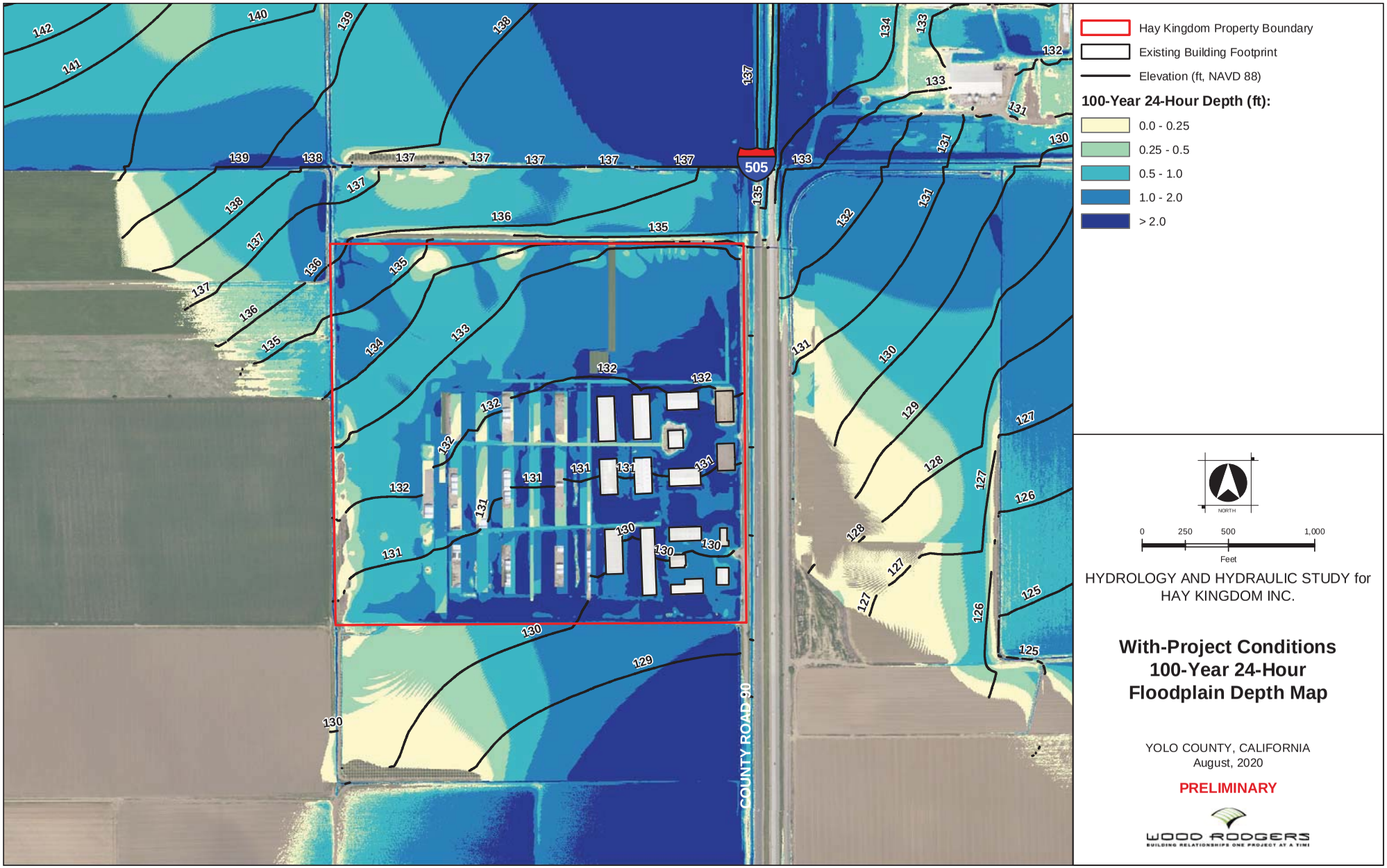
FIGURE 6



HYDROLOGY AND HYDRAULIC STUDY for
HAY KINGDOM INC.

With-Project Conditions 100-Year 24-Hour Floodplain Depth Map

YOLO COUNTY, CALIFORNIA
August, 2020

PRELIMINARY

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

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FIGURE 7

Hay Kingdom Property Boundary

Existing Building Footprint

Difference in WSEL:

-0.5 -0.25

-0.25 - -0.1

-0.1 - 0.1

0.1 - 0.25

0.25 - 0.5

NORTH

0 250 500 1,000

Feet

HYDROLOGY AND HYDRAULIC STUDY for
HAY KINGDOM INC.

Difference in 100-Year 24-Hour Water Surface Elevation (Baseline Condition - With-Project Condition) Map

YOLO COUNTY, CALIFORNIA
August, 2020

PRELIMINARY

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

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FIGURE 8

Hay Kingdom Property Boundary

Existing Building Footprint

Proposed Improvement:

Hay Pad

Road

Cover Structure

Proposed Mitigation Facility:

Raised Existing Road

Degrade Area

Channel

NORTH

0 150 300 600

Feet

HYDROLOGY AND HYDRAULIC STUDY for
HAY KINGDOM INC.

Proposed Mitigation Facilities Map

YOLO COUNTY, CALIFORNIA
August, 2020

PRELIMINARY

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

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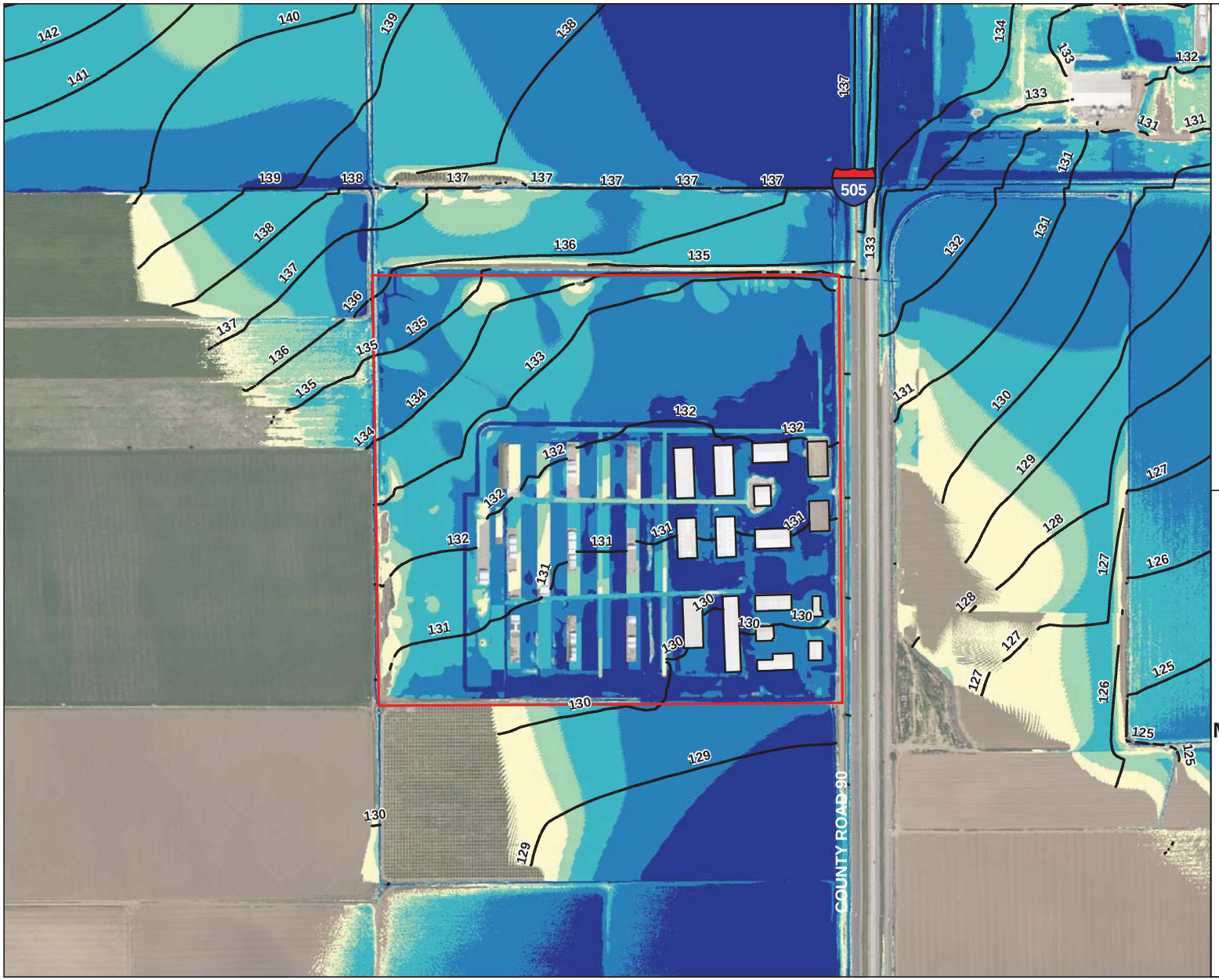
FIGURE 9



Hay Kingdom Property Boundary

Building Footprint

Elevation (ft, NAVD 88)

100-Year 24-Hour Depth (ft):

- 0.0 - 0.25
- 0.25 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- > 2.0

NORTH

0 250 500 1,000

Feet

HYDROLOGY AND HYDRAULIC STUDY for
HAY KINGDOM INC.

Mitigated With-Project Conditions 100-Year 24-Hour Floodplain Depth Map

YOLO COUNTY, CALIFORNIA
August, 2020

PRELIMINARY

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

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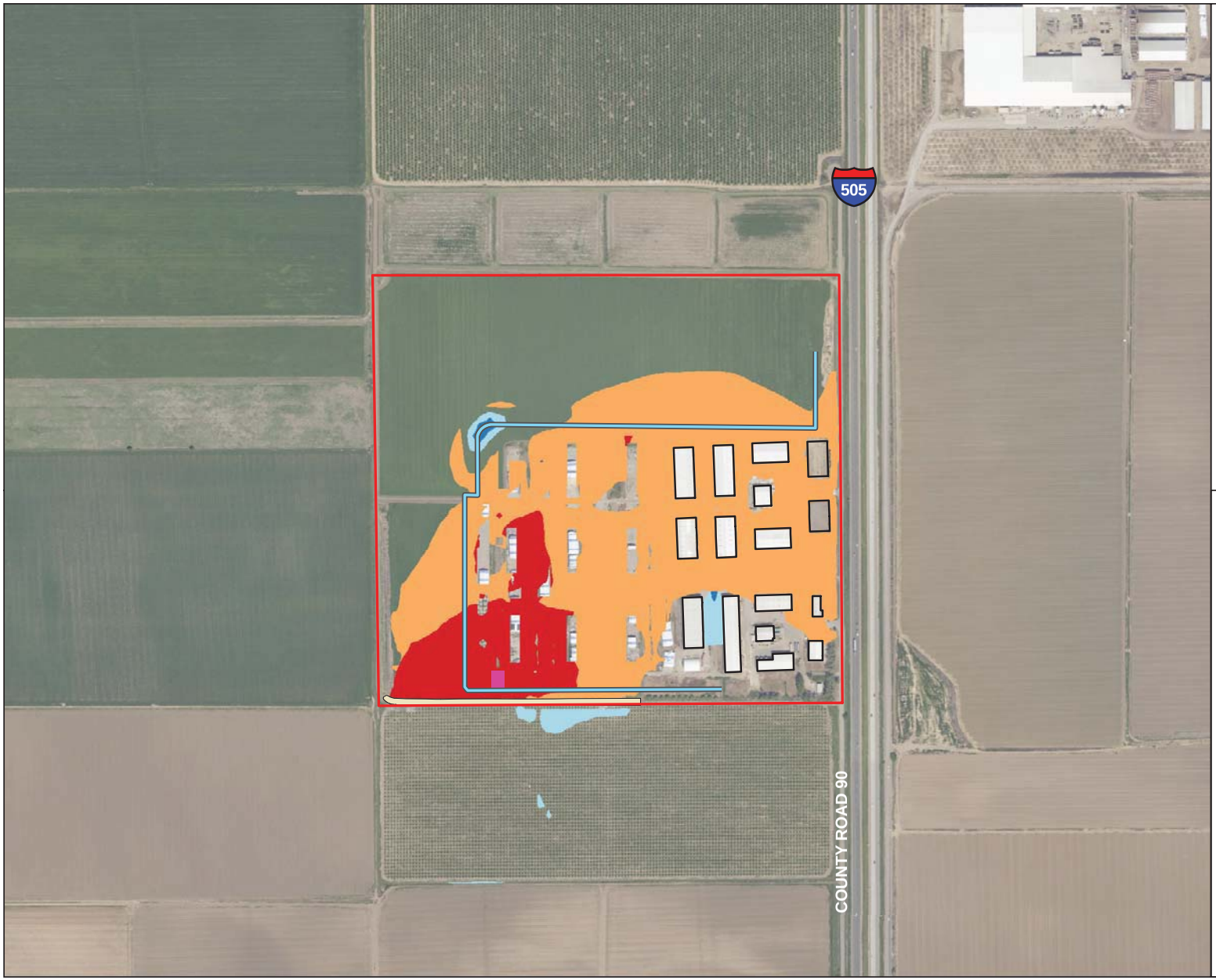
FIGURE 10



Hay Kingdom Property Boundary

Existing Building Footprint

Proposed Mitigation Facility:

Raised Existing Road

Degrade Area

Channel

Difference in WSEL:

-0.5 -0.25

-0.25 - -0.1

-0.1 - 0.1

0.1 - 0.25

0.25 - 0.5

NORTH

0 250 500 1,000

Feet

HYDROLOGY AND HYDRAULIC STUDY for
HAY KINGDOM INC.

Difference in 100-Year 24-Hour Water Surface Elevation (Baseline Condition - Mitigated With-Project Condition) Map

YOLO COUNTY, CALIFORNIA
August, 2020

PRELIMINARY

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

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FIGURE 11

APPENDIX A

Ponding and Overland Flow Analysis

PONDING & OVERLAND FLOW ANALYSIS FOR:

HAY KINGDOM

APN 038-040-033
26888 CR 90, Winters, CA 95694
Yolo County

August 2019

Prepared by:

R.E.Y. ENGINEERS, INC.
CIVIL ENGINEERS | LAND SURVEYORS | LiDAR
905 Sutter Street, Suite 200, Folsom, CA 95630
(916) 366 3040 T (916) 366 3303 F

Prepared for:
Travis Peterson, MS, QISP
865 Cotting Lane, Suite C
Vacaville, CA 95688

PROJECT INTRODUCTION & BACKGROUND

The existing Hay Kingdom property is located on the west side of County Road 90, approximately 0.6 miles south of County Road 31, 0.5 miles east of County Road 89, and to the northeast of the City of Winters. The property is 120 acres in size with approximately 65 acres used to farm hay and the remaining 55 acres used to process and store hay for export. The minimum and maximum elevations for the property are 135± and 127± feet above sea level with site topography sloping gradually from the northwest to the southeast, with slopes generally on the order of 0.3% in areas where hay is grown. In the areas where hay is processed and stored, the topography generally slopes north to south in graded swales between hay storage areas and buildings, again with slopes generally in the range of 0.3%.

The property is bounded by earthen service roads on the north, west and south side and a paved frontage road on the east. The existing roads are generally elevated above the property. The property is also bounded by a network of irrigation ditches on the north, west and south side, as well as a ditch along the frontage road to the east, which may or may not, convey irrigation. Site runoff is directed to the ditches on the south and east side of the property, and is then conveyed to the southeast corner of the property where two culverts, a 24" CMP and a 27" HDPE culvert, extend under the service road and outfall to the ditch along the frontage road on the adjacent property.

Hay Kingdom processes and stores hay onsite for eventual exportation. The hay is baled and stored in various buildings and areas outside the buildings until it is loaded on trucks for shipping. During heavy rains, there are issues with localized ponding on the property, as evidenced in April of this year. The localized ponding has inundated several of the hay storage areas and as a result, has created safety issues due to composting caused by the wet hay.

The purpose of this drainage analysis is to examine the current drainage conditions on site and find a resolution to minimize composting issues, while being cost effective and minimizing impacts to production.

ANALYSIS APPROACH

In February of this year, heavy rains caused localized ponding on the property, particularly in the southeast corner of the property. To assist in determining probable causes, a site visit was conducted and an aerial topography was prepared in July. The aerial topography covers the property's entire 120 acres and shows elevation contours, as well as gridded spot elevations, to enable us to determine runoff patterns and determine possible ponding areas.

Prior to the site visit and preparation of the aerial topography, research was conducted to determine if the property was within a recorded flood plain. Per the Flood Insurance Rate Map (FIRM), map #06113C0562G, dated June 18, 2010, the property is directly north of a FEMA designated Zone A special flood hazard area subject to inundation by the 1% annual chance flood and without a determined Base Flood Elevation (BFE). However, per the FIRM map, the Hay Kingdom property is within a Zone X flood area defined as, "Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood." It appears the property's

southern service road acts as a levee from the 1% annual chance flood. (See Figure 1-FIRM Map)

Additionally, attempts were made to determine possible offsite flows that could combine with onsite runoff, however, the irrigation ditches and drainage ditches adjacent to, and north of the property, are extensive, making it extremely difficult to determine tributaries, flow direction, ditch capacities, etc., as well as other factors unknown to, and outside the control of Hay Kingdom, such as pump and gate operations.

During the site visit, it also appeared recent ditch maintenance may have occurred at the southeast corner of the property in the area of the 24" CMP culvert and the 27" HDPE culvert that extends under the service road, as brush and debris was piled on the embankment. If debris was clogging the culverts, this could have been contributing to the local ponding issues as well.

Due to the following reasons, as mentioned above; possible tail water conditions at the 24" and 27" culverts, difficulty in determining offsite flows and possible culvert clogging, it was determined we would evaluate the site assuming total culvert failure and using the overland flow at the release points as a basis to establish site pad and building floor elevations to place the stored hay above any ponding.

PROCEDURE

Assuming total culvert failure, the site topography was analyzed to determine areas of ponding and the associated release point elevations. The site was analyzed from two perspectives, one looking at ponding caused by failure of the culverts at the site's ultimate release point; the lowest area of the property in the southeast corner, and the other looking at localized ponding throughout the site.

Analyzing the topography at the site's ultimate release point in the southeast corner of the property, if the 24" and 27" culvert were to fail, water would pond until it could spill over the southern service road at approximately elevation 127.4'-127.5' above sea level. Assuming a depth of six inches at the spill point, we have determined a ponding water surface elevation of approximately 128.0'. The attached site exhibit shows the extent of ponding at this elevation and shows a spillway width of approximately 570'. Any building floors or hay bale storage in this area would be set a minimum of six inches above this water surface elevation, which would be 128.5'.

For the buildings to the north of the ultimate ponding delineation, the topography was analyzed for localized ponding on a per building basis, with the associated spill point identified. Then assuming a two-inch water depth at the spill point, the building floor elevations were set a minimum of six inches above the water surface elevation at the spill points. The spill points, spill point elevations and minimum building floor elevations can be seen in the attached site exhibit.

The open hay bale storage areas generally have graded swales between them, which run north to south, and elevated service roads running west to east along the south side of the storage areas. Runoff in these areas is directed along the swale to culverts which run under the service road and then outfall to the swale on the south of the service road. For these cases, we again assumed total culvert failure, which would result in water ponding on the north side of the service road until it is able to spill over. The topography was analyzed for localized ponding on the west and east side of the hay storage areas and then

the associated spill points at the service roads were identified. Whichever spill point resulted in the highest ponding water surface elevation was used to establish the governing spill point. Then assuming a two-inch water depth at the spill point, the hay bale storage pad elevations were set a minimum of six inches above the water surface elevation at the spill point. The spill points, spill point elevations and minimum hay bale pad elevations can be seen in the attached site exhibit.

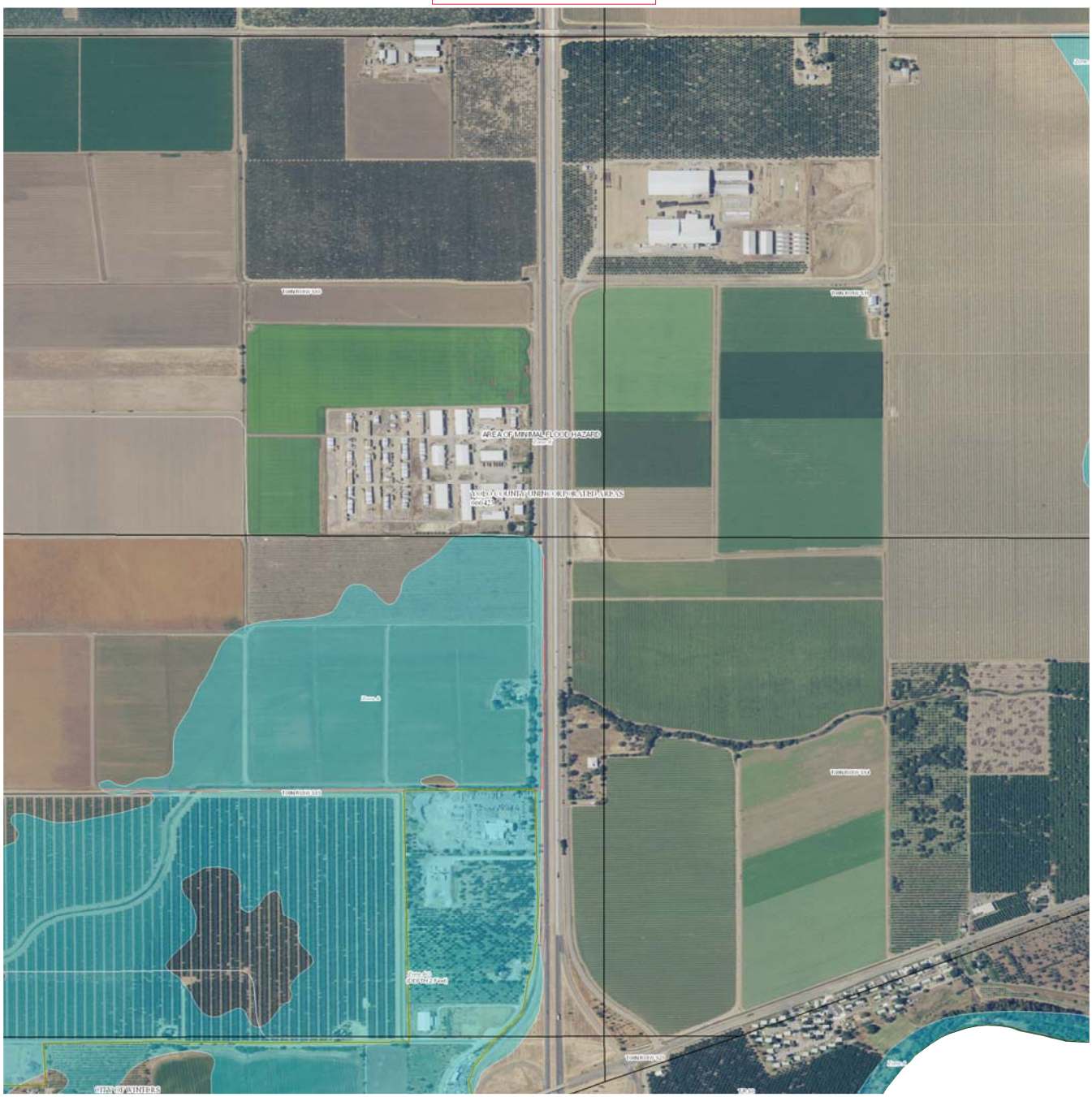
CONCLUSION

Currently, during heavy rainfall, the property has localized ponding, however, by conservatively assuming total culvert failure and ensuring hay bale storage above the resultant overland flow, surface water contact with the hay bales will be minimized.

APPENDIX

1. Figure 1 – FIRM Map
2. Site Plan with Ponding, Spill Points & Pad/Floor Elevations

FIGURE 1



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 — Cross Sections with 1% Annual Chance
- 17.5 — Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can beordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by USDA, Farm Service Agency (FSA). This information was derived from NAIP, dated April 11, 2018.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on 5/10/2019 1:42:41 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date.

SCALE

N

Map Projection:
GCS. Geodetic Reference System 1980;
Vertical Datum: No elevation features on this FIRM
For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map please see the Flood Insurance Study(FIS) Report for your community at https://msc.fema.gov

1 inch = 500 feet 1:6,000

0 250 500 1,000 1,500 2,000 Feet

0 50 100 200 300 400 Meters

FEMA National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

YOLO COUNTY, CALIFORNIA AND INCORPORATED AREAS

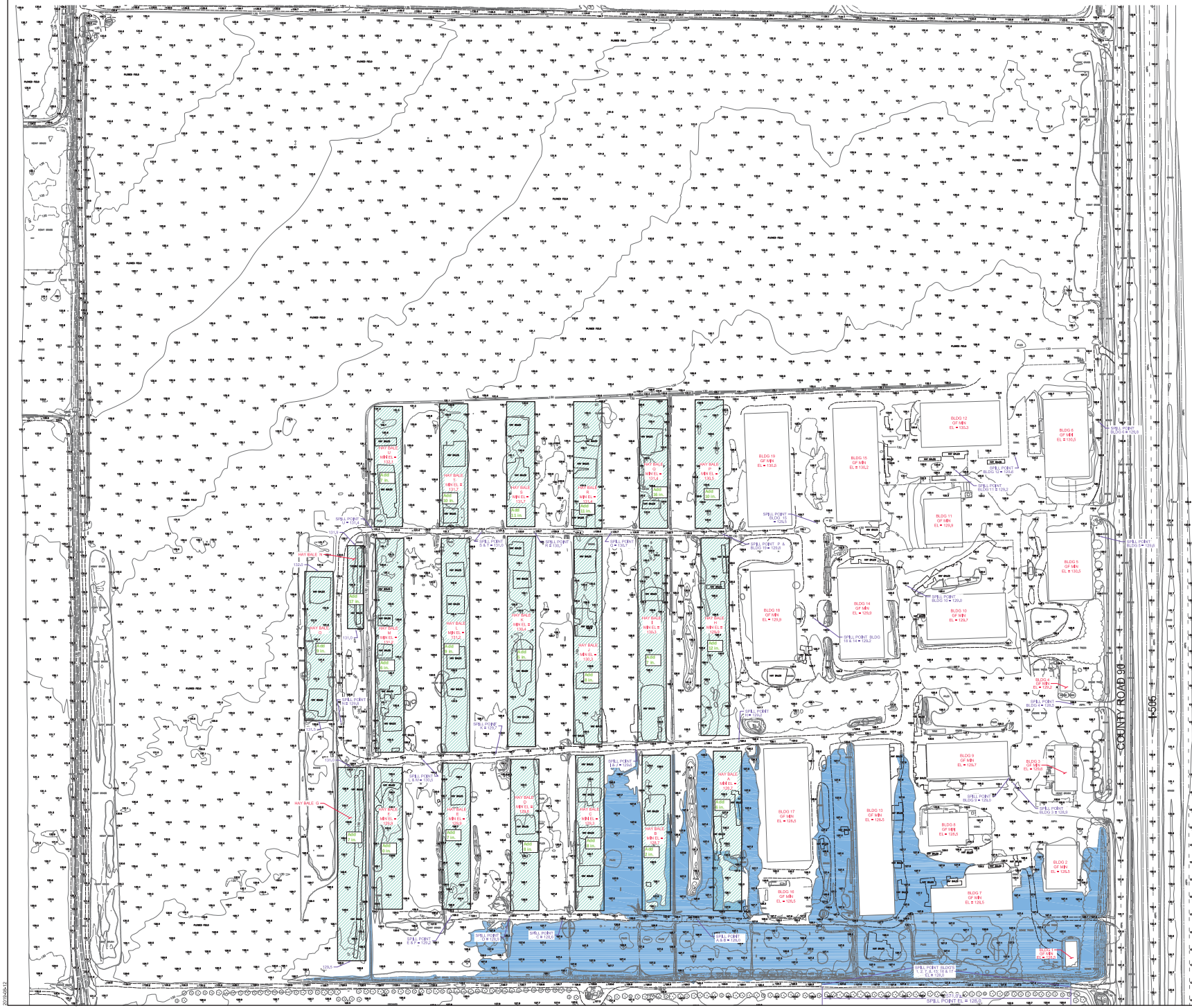
PANEL **562** OF **785**

Panel Contains:

COMMUNITY	NUMBER	PANEL
CITY OF WINTERS CALIFORNIA	060425	0562
YOLO COUNTY UNINCORPORATED AREAS CALIFORNIA	060423	0562
SOLANO COUNTY CALIFORNIA	060631	0562

MAP NUMBER
06113C0562G
EFFECTIVE DATE
06/18/2010

HAY KINGDOM



REY ENGINEERS, INC
Civil Engineers | Land Surveyors | NDAP
925 Sutter Street Suite 200 Folsom, CA 95630
Phone: (916) 366-1040 Fax: (916) 366-1803

0 40' 80' 160'

SCALE IN FEET

LEGEND

SITE RELEASE POINT WATER SURFACE EXTENT.

HAY BALE STORAGE AREAS

NOTE:

FLOOR ELEVATIONS AND HAY PAD ELEVATIONS ASSUME 0.5' MINIMUM ABOVE WATER SURFACE ELEVATION AT SPILL POINTS.

2019-09-12

APPENDIX B

Digital Files

Appendix D
Noise Appendix

NOISE TECHNICAL INFORMATION

Noise Descriptors

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound pressure level has become the most common descriptor used to characterize the "loudness" of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Decibels are measured using different scales, and it has been found that A-weighting of sound levels best reflects the human ear's reduced sensitivity to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. All references to decibels (dB) in this report will be A-weighted unless noted otherwise.

Several time-averaged scales represent noise environments and consequences of human activities. The most commonly used noise descriptors are the equivalent A–weighted sound level over a given time period (Leq)[1]; day–night 24-hour average sound level (Ldn)[2] with a nighttime increase of 10 dB to account for sensitivity to noise during the nighttime; and community noise equivalent level (CNEL)[3], also a 24-hour average that includes both an evening and a nighttime sensitivity weighting.

Table 1 identifies decibel levels for common sounds heard in the environment.

Noise Attenuation

Stationary point sources of noise, including construction equipment, attenuate (lessen) at a rate of 6 to 7.5 dB per doubling of distance from the source, depending on ground absorption. Soft sites attenuate at 7.5 dB per doubling because they have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. Hard sites have reflective surfaces (e.g., parking lots or smooth bodies of water) and therefore have less attenuation (6.0 dB per doubling). A street or roadway with moving vehicles (known as a "line" source), would typically attenuate at a lower rate, approximately 3 to 4.5 dB each time the distance doubles from the source, which also depends on ground absorption (Caltrans, 1998b). Physical barriers located between a noise source and the noise receptor, such as berms or sound walls, will increase the attenuation that occurs by distance alone.

Temporary Construction Noise

The noise levels generated by construction equipment would vary greatly depending upon factors such as the type and specific model of the equipment, the operation being performed, the condition of the equipment and the prevailing wind direction. **Table 2** shows typical noise levels from construction equipment. **Table 3** shows noise levels from construction activities, which typically range from 81 to 88 dB Leq at 50 feet, depending on the construction phase.

---

[1]The Equivalent Sound Level (Leq) is a single value of a constant sound level for the same measurement period duration, which has sound energy equal to the time–varying sound energy in the measurement period.

[2]Ldn is the day–night average sound level that is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to night between 10:00 p.m. and 7:00 a.m.

[3]CNEL is the average A-weighted noise level during a 24-hour day, obtained by addition of 5 decibels in the evening from 7:00 to 10:00 p.m., and an addition of a 10–decibel penalty in the night between 10:00 p.m. and 7:00 a.m.

Table 1: Typical Noise Levels

Noise Level (dB)	Outdoor Activity	Indoor Activity
90+	Gas lawn mower at 3 feet, jet flyover at 1,000 feet	Rock Band
80–90	Diesel truck at 50 feet	Loud television at 3 feet
70–80	Gas lawn mower at 100 feet, noisy urban area	Garbage disposal at 3 feet, vacuum cleaner at 10 feet
60–70	Commercial area	Normal speech at 3 feet
40–60	Quiet urban daytime, traffic at 300 feet	Large business office, dishwasher next room
20–40	Quiet rural, suburban nighttime	Concert hall (background), library, bedroom at night
10–20		Broadcast / recording studio
0	Lowest threshold of human hearing	Lowest threshold of human hearing

Source: modified from Caltrans, 1998a

Groundborne Vibration

Construction operations have the potential to result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. The ground vibration levels associated with various types of construction equipment at a distance of 25 feet are summarized in **Table 4**. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. The effects of ground vibration may be imperceptible at the lowest levels, low rumbling sounds and detectable vibrations at moderate levels, and slight damage to nearby structures at the highest levels.

At the highest levels of vibration, damage to structures is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely results in structural damage. For most structures, a peak particle velocity (PPV) threshold of 0.5 inches per second (in/sec) or less is sufficient to avoid structural damage. The Federal Transit Administration recommends a PPV threshold of 0.5 in/sec for residential and commercial structures, 0.25 in/sec for historic buildings and archaeological sites, and 0.2 in/sec for non-engineered timber and masonry buildings (FTA, 2006).

Table 2: Typical Noise Levels from Construction Equipment

Construction Equipment	Noise Level (dB, Lmax at 50 feet)
Air Compressor	78
Backhoe	78
Concrete Mixer Truck	79
Concrete Pump Truck	81
Crane	81
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Grader	85
Impact Pile Driver	101
Jackhammer	89
Loader	79
Paver	77
Pickup Truck	75
Roller	80

Source: FHWA, 2006

Table 3: Typical Construction Activities Noise Levels

Construction Phase	Noise Level (dB, Leq at 50 feet)
Ground Clearing	83
Excavation	88
Foundations	81
Erection	81
Finishing	88

Notes: Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.
Leq = equivalent sound level
Source: U.S. Environmental Protection Agency, Legal Compilation, 1973

Table 4: Representative Vibration Source Levels for Construction Equipment

Equipment		Peak Particle Velocity at 25 Feet (in/sec)
Pile Driver (impact)	upper range	1.518
	typical	0.644
Pile Driver (sonic)	upper range	0.734
	typical	0.170
Vibratory Roller		0.210
Large Bulldozer		0.089
Loaded Trucks		0.076
Jackhammer		0.035
Small Bulldozer		0.003

Source: FTA, 2006

State Guidelines

State Land Use Compatibility standards for Community Noise (**Table 5**) are provided in the State of California General Plan Guidelines.

TABLE 5:
LAND USE COMPATIBILITY NOISE STANDARDS

Land Use Category	Community Noise Exposure Ldn or CNEL, dB
Residential – Low Density Single Family, Duplex, Mobile Homes	50 to 60 = Normally acceptable 55 to 70 = Conditionally acceptable 70 to 75 = Normally unacceptable 75 to 85 = Clearly unacceptable
Residential -- Multifamily	50 to 65 = Normally acceptable 60 to 70 = Conditionally acceptable 70 to 75 = Normally unacceptable 75 to 85 = Clearly unacceptable
Transient Lodging – Motels, Hotels	50 to 65 = Normally acceptable 60 to 70 = Conditionally acceptable 70 to 80 = Normally unacceptable 80 to 85 = Clearly unacceptable
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 to 70 = Normally acceptable 60 to 70 = Conditionally acceptable 70 to 80 = Normally unacceptable 80 to 85 = Clearly unacceptable
Auditoriums, Concert Halls, Amphitheaters	50 to 75 = Conditionally acceptable 65 to 85 = Clearly unacceptable
Sports Arena, Outdoor Spectator Sports	50 to 70 = Conditionally acceptable 70 to 85 = Clearly unacceptable
Playgrounds, Neighborhood Parks	50 to 70 = Normally acceptable 67.5 to 75 = Normally unacceptable 72.5 to 85 = Clearly unacceptable
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 to 75 = Normally acceptable 70 to 80 = Normally unacceptable 80 to 85 = Clearly Unacceptable
Office Buildings, Business, Commercial and Professional	50 to 70 = Normally acceptable 67.5 to 77.5 = Conditionally acceptable 75 to 85 = Normally acceptable
Industrial, Manufacturing, Utilities, Agriculture	50 to 75 = Normally acceptable 70 to 80 = Conditionally acceptable 75 to 85 = Normally acceptable

Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
Normally Unacceptable	New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
Clearly Unacceptable	New construction or development generally should not be undertaken.

Source: **State of California General Plan Guidelines, Office of Planning and Research, 2017.**

REFERENCES

California Department of Transportation (Caltrans), 1998a. *Technical Noise Supplement*.

California Department of Transportation (Caltrans), 1998b. *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects*, October 1998.

Federal Highway Administration (FHWA), 2006. *Roadway Construction Noise Model User's Guide*.

Federal Transit Administration (FTA), 2006. *Transit Noise and Vibration Impact Assessment* (FTA-VA-90-1003-06).

Governor's Office of Planning and Research (OPR), 2017. *State of California General Plan Guidelines.* Appendix D: Noise Element Guidelines.

Appendix E
Fire Safety Plan

The McMullen Company, Inc.

FIRE SAFETY and PREVENTION PLAN

FOR

HAYKINGDOM, INC.

26888 Road 90

Winters, California

Developed By
The McMullen Company, Inc.
1260 Lake Blvd., Suite 260
Davis, California 95616

September 7, 2019

TABLE OF CONTENTS

OVERVIEW

Haykingdom Inc., located at 26888 County Road 90 Winters, California, is an exporter of customized assortments of hays and grasses along with varieties of straws in both big and small bales. In 2002 Haykingdom established their Winters facility, which is a 120 acre parcel which is zoned AN for 80 acres of the parcel and AI for the remaining 40 acres.

Haykingdom is preparing this Fire Safety and Prevention Plan for the purpose of identifying methods to reduce the potential for accidental fires at the Winters facility. This plan responds to the issue raised by the County of Yolo and the Winters Fire Department and expands on standard sound fire prevention practices appropriate for this type of operation. In addition, this plan serves as an ongoing operational guide for Haykingdom to maintain a reasonable standard of fire prevention practices. By following this plan, Haykingdom intends to continue business while achieving a standard of fire safety for both the community and the Haykingdom facility.

This Fire Safety and Prevention Plan will reduce the fire risk and control potential loss. This Plan also addresses strategies in the event of fire and underscores strategies for total fire suppression and extinguishment efforts to reduce the amount of residual smoke and odor that could be generated. This Fire Safety and Prevention Plan reflect standard sound fire prevention practices that are aligned with the provisions of the California Fire Code and accepted nationally recognized standards.

SECTION ONE – BALED HAY STORAGE LIMITATIONS

Haykindom will store hay as follows:

1. Existing baled hay storage near any building will be moved and maintained a minimum horizontal distance equal to the height of the hay pile from the exterior walls of any building on the premises including those barns used for hay storage.

2. Any newly delivered hay will also be stored in the above manor.

3. Stacks of hay as described above will not be placed within any roadway designated as a fire lane unless a full and unobstructed roadway of 20 feet can be maintained.

4. All existing exterior stacks will be reduced to a maximum size not to exceed 100 tons and will be separated from each other by a clear space of not less than of 20 feet.
5. Any newly delivered hay will also be stored in the above manor.

6. All new delivery of hay will be placed on re-conditioned storage pads. The pads will be raised according to the approved drainage plan.

7. Baled hay stored inside barns will be in accordance with Chapter 52 of the California Fire Code, 2013 Edition.

SECTION TWO – WATER TANK ACCESSIBILITY & OPERABILITY

The 21,000 gallon on site water tank and piping will be made operational and maintained full of water for emergency use.

1. The 21,000 gallon on site water tank's piping will be replaced with steel piping and provided with a 4 ½" outlet with the thread type approved by the Winters Fire Department.

2. All storage will be removed from the area around the 21,000 gallon water tank and will be maintained free and clear for a minimum of 20 feet for fire department access.

3. Protective bollards and approved "Keep Clear" signs will be installed in front of the connection area to insure that continuous access for the fire department is maintained at all times and not obstructed with storage or vehicles.

SECTION THREE – WATER SUPPLY FOR FIRE PROTECTION

1. The water supply distribution system consists of-a 1350 GPM well pump and 8 fire hydrants.

2. The two fire hydrants installed in conjunction with the new hay processing building and the new well pump are equipped with NHT 2 ½" and 4 ½" outlets, as approved by the Winters Fire Department. The hydrant located by the new hay processing building is a pressurized wet hydrant.

3. The other six fire hydrants are dry type hydrants, constructed of 6" Schedule 40 PVC piping and fittings, with a single NHT 4 ½" outlet and 2 ½" adaptor.

4. Standard operating procedures will be developed for activating the well pump and charging the dry hydrant system. The procedures will be kept on file at the facility with the Fire & Emergency Plan.

   The well pump will be activated automatically upon loss of pressure in either the automatic fire sprinkler system (of the the new processing building) or the fire hydrant system (located by the processing building) .

   Designated staff technicians can also manually activate the well pump and turn on the water to the dry hydrants during a fire or as required.

5. Protective bollards will be installed at all fire hydrants to protect from vehicle traffic in accordance with the specifications of Section 312 of the California Fire Code, 2013, Edition as follows:

a) Posts will be 4" in diameter, filled with concrete.
b) Set not less than 3' deep in a concrete footing.
c) Top of the post not less than 3' in height.

6. In addition to the onsite fixed water supply for fire protection, Haykingdom has two onsite water trucks that are capable of providing additional water for fire protection purposes.

7. As part of this plan, Haykingdom will insure that the water trucks are maintained full of water and in a ready state except for those times the water trucks are being used for operational purposes.

SECTION FOUR – FIRE DEPARTMENT ACCESS

Fire department access roadways at Haykingdom will be provided and designated as "Fire Lanes". on Haykingdom's site plan.The current condition and width of Haykingdom's existing fire department access roads are acceptable to the Winters Fire Department.

Haykingdom will be providing secondary access roadways between the large exterior hay stacks. The secondary access roadways will consist of grading the compacted dirt surface and will be periodically maintained as necessary.

Roadways to all haystacks will allow unobstructed access to all haystacks with a hay bale "squeeze" loader to quickly move sections of hay as necessary.

1. Roadways designated on Haykingdom's Site Plan as fire lanes will be maintained at all times with an all weather surface to accommodate and support the imposed loads of fire apparatus.
3. No part of any building on the premises will be more than 150 feet from any roadway complying with the above design criteria and the roadway design includes the two westerly driveways serving the outdoor storage areas.

4. As set forth on the Site Plan fire apparatus will be able to turn around in such a manner that no dead end driveways will exceed 500 feet in depth.

5. Parking will be prohibited along designated fire lane where a clear and unobstructed width of 20 feet cannot be maintained. "NO PARKING FIRE LANE" signs will be posted in locations as directed by the Winters Fire Department in accordance with California Fire Code, Appendix D, Section D103.6.

SECTION FIVE – AUTOMATIC FIRE SPRINKLER SYSTEM

The new processing building is provided with an automatic fire sprinkler system. The sprinkler system is being supplied from the new well pump, with sufficient pressure and waterflow (as required on the approved plans & specifications).

1. The automatic fire sprinkler system will be monitored in accordance with the California Fire Code, Sections 903.4 & 907.6.6 and NFPA 72 National Fire Alarm Code.

2. The automatic fire sprinkler system and water supply pump will be inspected and tested as required, and in accordance with the California Fire Code, Section 901 and NFPA 25, California Edition.

3. The fire department connection (FDC) used to support the automatic sprinkler system will be maintained clear and free of storage, vegetation and/or parked vehicles at all times.

SECTION SIX – PORTABLE FIRE EXTINGUISHERS

Haykingdom will insure the following:

1. Portable fire extinguishers are provided on all mobile equipment which is used for, and around hay processing, transferring or storage. All fire extinguishers located on mobile equipment have a minimum rating of 2-A:20-B:C.

2. All buildings where hay is stored or processed are provided with 2-A rated 2-1/2 gallon pressurized water fire extinguishers or a 3/4" garden hose continuously connected and equipped with a shut off nozzle with sufficient pressure and hose to reach all locations where hay is being stored or processed. The 2-1/2 gallon pressurized water fire extinguishers are located and maintained in accordance with the California Code of Regulations, Title 19 and the California Fire Code, Section 906.

3. All hay processing buildings are provided with portable fire extinguishers having a minimum rating of 3A, 40B:C, which are located and maintained in accordance with the California Code of Regulations, Title-19 and the California Fire Code, Section 906.

4. Existing employees are trained on the use of portable fire extinguishers. All new employees will receive training on the use of portable fire extinguishers. A written record of employee training will be maintained on the premises.

SECTION SEVEN – MOBILE IMPLEMENT FIRE RISK REDUCTION

Haykingdom, will reduce fire risks from mobile equipment as follows:

1. Insure that each mobile piece of equipment used in the process of handling hay and similar combustible vegetation on the premises beyond are equipped with approved spark arrestors and that the spark arrestors are being maintained and in good repair.

2. All liquid fueled vehicles such as golf cart style utility units and all portable liquid fueled equipment such as weed eaters or similar tools will also be provided with approved spark arrestors and said spark arrestors will be maintained in good repair.

3. Over the road transport trucks will be loaded and unloaded wherein the cab of the truck is positioned more than 50 feet from any hay storage to avoid hot carbon discharge from the exhaust systems reaching the combustible storage.

SECTION EIGHT – INTERNAL TEMPERATURE/MOISTURE MONITORING OF BALED MATERIAL

To reduce the risks of spontaneous ignition of hay and similar baled vegetation products Haykingdom Inc. will:

1. Notify their suppliers of hay and similar products that they will not accept shipments that have not been monitored at the time of baling and at the shipping point for recognized acceptable levels of moisture and temperature.

2. Prior to materials being received and unloaded at the site being unloaded, personnel will test the materials for moisture and temperature to insure that the levels are within the acceptable range (14%) maximum moisture content). All moisture and temperature records in the operation software system will be analyzed by Haykingdom's management.

NOTE: Haykindom Inc. will not receive nor accept any hay with a moisture contact higher than 16%.

3. Any hay received with moisture content higher than 14% will be stored separately and monitored. This hay will be separated and stored in a single bale layer to reduce moisture quickly.

4. Immediate action will be undertaken to remove any hay with-moisture content higher than15% and/or an internal temperature above 125˚F. This hay, which may a exhibit a higher than normal potential for spontaneous ignition, will be moved to a separate location, providing air circulation and cooling allowing moisture and temperature to drop to a safe level.

5. The readings of the moisture and temperature levels will be either manually recorded or electronically recorded and downloaded from the measuring device.

SECTION NINE – EMERGENCY NOTIFICATION AND INITIAL FIRE CONTROL

Haykingdom Inc. recognizes the importance of the reporting of fires and other emergencies as an urgent matter. At least one individual will have a cellular phone available at all times while working in the storage barn areas, processing buildings and the outdoor storage areas.

UPON DISCOVERY OF FIRE OR SMOKE

1. Haykingdom staff will immediately contact the Haykingdom office staff, who will then call 911 to report the fire or emergency.

2. All Haykingdom staff with be notified upon any fire on the premises.

3. Haykindom staff will immediately commence their assigned duties in accordance with the facility Fire & Emergency Plan.

4. Fire extinguishes and/or water hoses will be utilized initially as appropriate for any fires inside storage barn areas, processing buildings or office/maintenance buildings or fires involving mobile equipment or welding/cutting operations.

5. Designated Haykingdom staff will switch-on the well pump and open the valve supplying the dry hydrants, and then verify that water is available to all hydrants for fire department use.

6. All available water trucks will be filled and driven to the fire site. Water truck operators will initiate fire suppression.

7. Designated "squeeze" loader drivers will move hay away from fire site to prevent fire from spreading (only when safe to do so).

8. Upon Winters Fire Department arrival on scene, Haykingdom staff under the direction of the Winters Fire Department, will assist the fire department as ordered.

SECTION TEN – REDUCTION OF POTENTIAL IGNITION SOURCES

Haykingdom will implement the following in an effort to avoid an accidental fire resulting from careless smoking and other potential ignition sources.

1. Signs of contrasting color with lettering of at least 4 inches high with a stroke of not less than ½ inch will be posted at both entrances to the property that read "No Smoking".

2. "No Smoking" signs will be posted at each hay barn and processing building and readily visible at all entrances, inside the buildings and on the exterior walls.

3. Where the owner determines there is a need for a designated smoking area for employees and drivers, the smoking area will be clearly identified and located in an area approved by the Winters Fire Department.

4. Every employee will receive instructions regarding the "No Smoking Policy" for the premises, and written records maintained.

5. "No Smoking" signs will also be posted where flammable and combustible liquids are dispensed.

SECTION ELEVEN – WELDING AND CUTTING OPERATIONS

Haykingdom has implemented the following policy regarding welding and cutting operations on site:

1. Haykingdom will obtain a Welding & Cutting Operational Permit from the Winters Fire Department.

2. All cutting and welding conducted on site will be in accordance with the approved Welding & Cutting Operational Permit. Exterior areas will be adequately cleared and separated from any hay or combustible material prior to any hotwork.

3. All welding & cutting operational work will be supervised by the management team, regardless of whether it is an outside vendor or an in-house employee conducting welding/cutting operations. A designated employee will be assigned to monitor all welding and cutting operations for sparks or hot slag, and will immediately initiate fire extinguishment as necessary.

4. At least one 2 1/2 gal.water fire extinguisher or a a preconnected water hose equipped with a spray type shut-off nozzle will be at each hotwork site prior to any welding or cutting operations.

5. All welding, cutting, open torches and other hot work operations will comply with Chapter 35 of the California Fire Code, 2013 Edition.

SECTION TWELVE – ONSITE VEGETATION CONTROL

Haykingdom will manage onsite vegetation controls as follows:

1. All dry grass, weeds or brush will be removed from around every building for a minimum of 30 feet down to bare earth.

2. All dry grass, weeds or brush will be removed from the outdoor hay storage areas including the creation of a minimum of a 30 foot clear space from the outer edges of any of the stored materials.

3. A comprehensive spraying operation to prevent reoccurring vegetation problem around buildings and in the outdoor hay storage area will be undertaken.

4. All weeds, grass or brush will be removed or mowed down to a height of not more than four inches along the Road 90 frontage of the property.

SECTION THIRTEEN – STORAGE PADS FOR OUTDOOR STORAGE

1. Prior to receiving any additional baled material slated for outdoor storage, the pads will be revised as necessary in accordance with the Yolo County Conditional Use Permit.

2. Drainage will be maintained in accordance with the drainage plan of the Yolo County Conditional Use Permit.

SECTION FOURTEEN – POST FIRE MANAGEMENT PLAN

Haykingdom will implement a post fire management plan that includes the following elements:

1. Haykingdom in addition to its own onsite equipment will rent additional equipment as they deem necessary to aggressively disassemble the burning stacks and moving unburned hay away from the fire area.

2. Haykingdom will develop a prearrangement with a vendor that can supply the necessary rental equipment required for the disassembling and spreading of the stacks in order to minimize the time factor in obtaining the equipment.

4. Designated pads with adequate separation will be available for rapid movement of hay during a heating or fire event.

SECTION FIFTEEN – GENERAL HOUSEKEEPING

General good housekeeping of the premises is an important tool in preventing unwanted fires and the spread of those fires to surrounding buildings and combustible storage. Haykingdom is prepared to undertake the following housekeeping improvements:

1. Eliminate trash and/or materials that are no longer needed as part of the operation and dispose of them properly at a landfill.

2. Move the piles of tires that are intended for use in holding down the tarps to an area free of combustible vegetation and no closer than 50 feet to any building or storage of combustible fibers. Stacks of tires will not exceed 6 feet in height.

3. Loose hay and debris generated from the baled products will be collected from around all buildings at least once each week and properly disposed of.

SECTION SIXTEEN – FLAMMABLE & COMBUSTIBLE LIQUIDS

Haykingdom Inc. recognizes the importance of the proper storage, handling and dispensing of flammable and combustible liquids.

1. All containers will be of the approved type for the flammable or combustible liquids being stored, and such containers will be maintained in the closed position at all times when not in use. Safety cans with self-closing lids will be purchased and used for all flammable liquids.

2. Flammable and combustible liquids will be stored in a location as set forth on the Site Plan or other location as approved by the Winters Fire Department where potential ignition sources are not present. Approved flammable liquid cabinets will be used to store Class I and II flammable liquids in containers of less than 5 gallons.

3. Transfer of liquids from portable containers dispensing Class I liquids will only be conducted after the container is properly grounded.

4. Containers and tanks will be properly labeled with warning signs that read "Danger Flammable Liquids" and "Danger Combustible Liquids".

5. Approved 3-A:40-B:C portable fire extinguishers are provided and readily available, located inside the maintenance shop. A portable fire extinguisher with a minimum rating of 2A:20-B:C will be provided on-site during any refueling operation.

6. An evaluation of the existing fueling facilities, including the above ground fuel storage tanks will be conducted and where deemed necessary, a recommended plan of correctional will be developed for review and approval by the Winters Fire Department.

Appendix F
Treatment Protocol for Handling Human Remains and Cultural Items Affiliated with the Yocha Dehe Wintun Nation

YOCHA DEHE
CULTURAL RESOURCES

Treatment Protocol for Handling Human Remains and Cultural Items Affiliated with the Yocha Dehe Wintun Nation

The purpose of this Protocol is to formalize procedures for the treatment of Native American human remains, grave goods, ceremonial items, and items of cultural patrimony, in the event that any are found in conjunction with development, including archaeological studies, excavation, geotechnical investigations, grading, and any ground disturbing activity. This Protocol also formalizes procedures for Tribal monitoring during archaeological studies, grading, and ground-disturbing activities.

I. Cultural Affiliation

The Yocha Dehe Wintun Nation ("Tribe") traditionally occupied lands in Yolo, Solano, Lake, Colusa and Napa Counties. The Tribe has designated its Cultural Resources Committee ("Committee") to act on the Tribe's behalf with respect to the provisions of this Protocol. Any human remains which are found in conjunction with Projects on lands culturally-affiliated with the Tribe shall be treated in accordance with Section III of this Protocol. Any other cultural resources shall be treated in accordance with Section IV of this Protocol.

II. Inadvertent Discovery of Native American Human Remains

Whenever Native American human remains are found during the course of a Project, the determination of Most Likely Descendant ("MLD") under California Public Resources Code Section 5097.98 will be made by the Native American Heritage Commission ("NAHC") upon notification to the NAHC of the discovery of said remains at a Project site. If the location of the site and the history and prehistory of the area is culturally-affiliated with the Tribe, the NAHC contacts the Tribe; a Tribal member will be designated by the Tribe to consult with the landowner and/or project proponents.

Should the NAHC determine that a member of an Indian tribe other than Yocha Dehe Wintun Nation is the MLD, and the Tribe is in agreement with this determination, the terms of this Protocol relating to the treatment of such Native American human remains shall not be applicable; however, that situation is very unlikely.

III. Treatment of Native American Remains

In the event that Native American human remains are found during development of a Project and the Tribe or a member of the Tribe is determined to be MLD pursuant to Section II of this Protocol, the following provisions shall apply. The Medical Examiner shall immediately be notified, ground disturbing activities in that location shall cease and the Tribe shall be allowed, pursuant to California Public Resources Code Section 5097.98(a), to (1) inspect the site

of the discovery and (2) make determinations as to how the human remains and grave goods should be treated and disposed of with appropriate dignity.

The Tribe shall complete its inspection and make its MLD recommendation within forty-eight (48) hours of getting access to the site. The Tribe shall have the final determination as to the disposition and treatment of human remains and grave goods. Said determination may include avoidance of the human remains, reburial on-site, or reburial on tribal or other lands that will not be disturbed in the future.

The Tribe may wish to rebury said human remains and grave goods or ceremonial and cultural items on or near the site of their discovery, in an area which will not be subject to future disturbances over a prolonged period of time. Reburial of human remains shall be accomplished in compliance with the California Public Resources Code Sections 5097.98(a) and (b).

The term "human remains" encompasses more than human bones because the Tribe's traditions call for the burial of associated cultural items with the deceased (funerary objects), and/or the ceremonial burning of Native American human remains, funerary objects, grave goods and animals. Ashes, soils and other remnants of these burning ceremonies, as well as associated funerary objects and unassociated funerary objects buried with or found near the Native American remains are to be treated in the same manner as bones or bone fragments that remain intact.

IV. Non-Disclosure of Location of Reburials

Unless otherwise required by law, the site of any reburial of Native American human remains shall not be disclosed and will not be governed by public disclosure requirements of the California Public Records Act, Cal. Govt. Code § 6250 et seq. The Medical Examiner shall withhold public disclosure of information related to such reburial pursuant to the specific exemption set forth in California Government Code Section 6254(r). The Tribe will require that the location for reburial is recorded with the California Historic Resources Inventory System ("CHRIS") on a form that is acceptable to the CHRIS center. The Tribe may also suggest that the landowner enter into an agreement regarding the confidentiality of site information that will run with title on the property.

V. Treatment of Cultural Resources

Treatment of all cultural items, including ceremonial items and archeological items will reflect the religious beliefs, customs, and practices of the Tribe. All cultural items, including ceremonial items and archeological items, which may be found at a Project site should be turned over to the Tribe for appropriate treatment, unless otherwise ordered by a court or agency of competent jurisdiction. The Project Proponent should waive any and all claims to ownership of

Tribal ceremonial and cultural items, including archeological items, which may be found on a Project site in favor of the Tribe. If any intermediary, (for example, an archaeologist retained by the Project Proponent) is necessary, said entity or individual shall not possess those items for longer than is reasonably necessary, as determined solely by the Tribe.

VI. Inadvertent Discoveries

If additional significant sites or sites not identified as significant in a Project environmental review process, but later determined to be significant, are located within a Project impact area, such sites will be subjected to further archeological and cultural significance evaluation by the Project Proponent, the Lead Agency, and the Tribe to determine if additional mitigation measures are necessary to treat sites in a culturally appropriate manner consistent with CEQA requirements for mitigation of impacts to cultural resources. If there are human remains present that have been identified as Native American, all work will cease for a period of up to 30 days in accordance with Federal Law.