County of Yolo

Department of General Services

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Initial Study/Mitigated Negative Declaration

Project Identification: Knights Landing Boat Launch

CEQA Lead Agency: County of Yolo
General Services Department
120 West Main Street, Suite D
Woodland, CA 95695

Preparer: Raney Planning & Management, Inc.
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Month/Year: September 2017

Mitigated Negative Declaration
Knights Landing Boat Launch
Yolo County, California

Yolo County is acting as lead agency under the California Environmental Quality Act (CEQA), pursuant to Public Resources Code sections 21000 *et seq.*, for the Knight's Landing Boat Launch Project (proposed project). Yolo County has prepared an Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed project, pursuant to CEQA guidelines Sections 15070-15075.

Project Background

Yolo County began managing the Knights Landing Boat Launching/River Access Facility (the facility) in 1978, after the Wildlife Conservation Board (WCB), granted a long-term lease agreement to the County. Although the WCB maintains ownership of the facility, the long-term lease agreement between the County and WCB allows the County to operate the facility until at least 2023. On March 21, 2006, the Yolo County Board of Supervisors adopted a resolution allowing the Yolo County Parks Division to apply for grant funds from the California State Department of Boating and Waterways' Local Assistance Grant Program. The grant application sought funds for the improvement of the existing facility. In April 2006, the Parks Division of the Yolo County General Services Department prepared an Initial Study/Negative Declaration (IS/ND) for the County's proposal to renovate the existing Boat Launching facility. A Notice of Determination was issued by the Yolo County Parks Division for the IS/ND on March 24, 2009. In response to the County's application, the WCB awarded the County grant funding for the proposed project.

Applications for various permits from several agencies were submitted following the award of grant funds from the WCB. Permitting and approval agencies previously involved in the project included the California Department of Transportation (Caltrans), the Yolo County Building Department, the Knights Landing Community Services District, Yolo County Local Agency Formation Commission, the Central Valley Flood Protection Board, the Central Valley Regional Water Quality Control Board, the California Department of Fish and Wildlife, the California State Lands Commission, the U.S. Army Corps of Engineers (USACE), and the WCB. Although permit applications were previously submitted, and design plans were completed, the former improvement project was not implemented.

On February 23, 2017, the WCB awarded the County of Yolo a $1.4 million grant to implement the improvement plans that were previously developed for renovation of the Knights Landing Boat Launch Facility.

Project Location and Setting

The proposed project site is located on an approximately four-acre parcel, to the northwest of the community of Knights Landing in northeastern Yolo County, California (see Figure 1). The site address is 9350 State Route (SR) 45, Knights Landing, CA 95645, Assessor's Parcel Number 056-160-001. The confluence of the Sycamore Slough and the Sacramento River is approximately 200 feet northeast of the project site (see Figure 2).

The County's General Plan designates the site as Open Space (OS), and the site is zoned as Public Open Space (POS). SR 45 and County Road 108 provide access to the project site.

Although mostly paved, the facility is immediately surrounded by a narrow band of valley foothill riparian habitat. Surrounding land uses include agricultural land to the north and west, and single-family residential uses associated with the community of Knights Landing to the south across Sycamore Slough. The Sacramento River is located to the north and east of the project site. Further upstream of the proposed project, approximately 767 feet southwest, is Sycamore Slough Dam. Constructed in the early 1900's, this concrete structure spans the entire width of the slough, approximately 30 feet above the stream channel.

Project Description

The proposed project would include the renovation of the existing boat launch facility located at the Knights Landing Boat Launch. Renovation of the existing facility would include the following improvements:

- Installing two fiberglass boarding floats anchored with concrete deadman (no pilings);
- Re-paving the existing parking lot, enlarging the parking lot by approximately 1,000 square feet (sf), re-striping, and re-curbing the existing parking lot;
- Landscaping parking area with sustainable vegetation;
- Constructing a permanent 350 sf vaulted restroom;
- Completing utility services for a camp host (electrical, phone, potable water, water well);
- Replacing existing iron-ranger self-pay station with a small automated pay station on a pedestal;
- Constructing a new monument sign and an educational/informational kiosk;
- Constructing a 500 sf (raised) handicap accessible fishing platform from recycled plastic lumber (re-manufactured post-consumer waste product);
- Installation of security cameras;
- Construction of a water well to serve the project site;
- Stabilizing the slough banks with cellular confinement fabric and planting vegetation to stabilize the slopes against boat wake erosion, and to increase wildlife habitat; and
- Expanding the existing launching ramp to accommodate two launching lanes (see Figure 3).

Figure 1
Regional Project Location

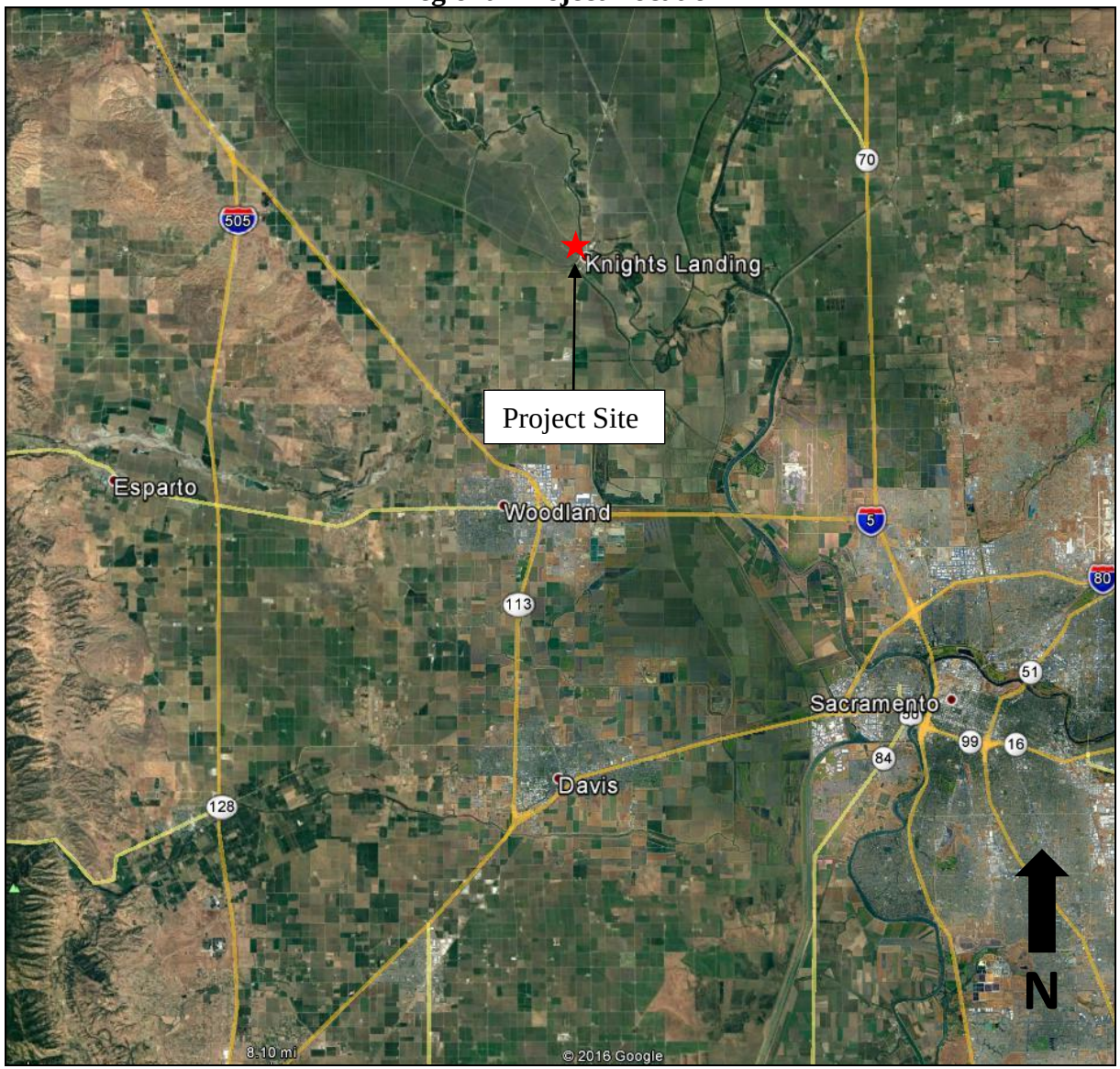
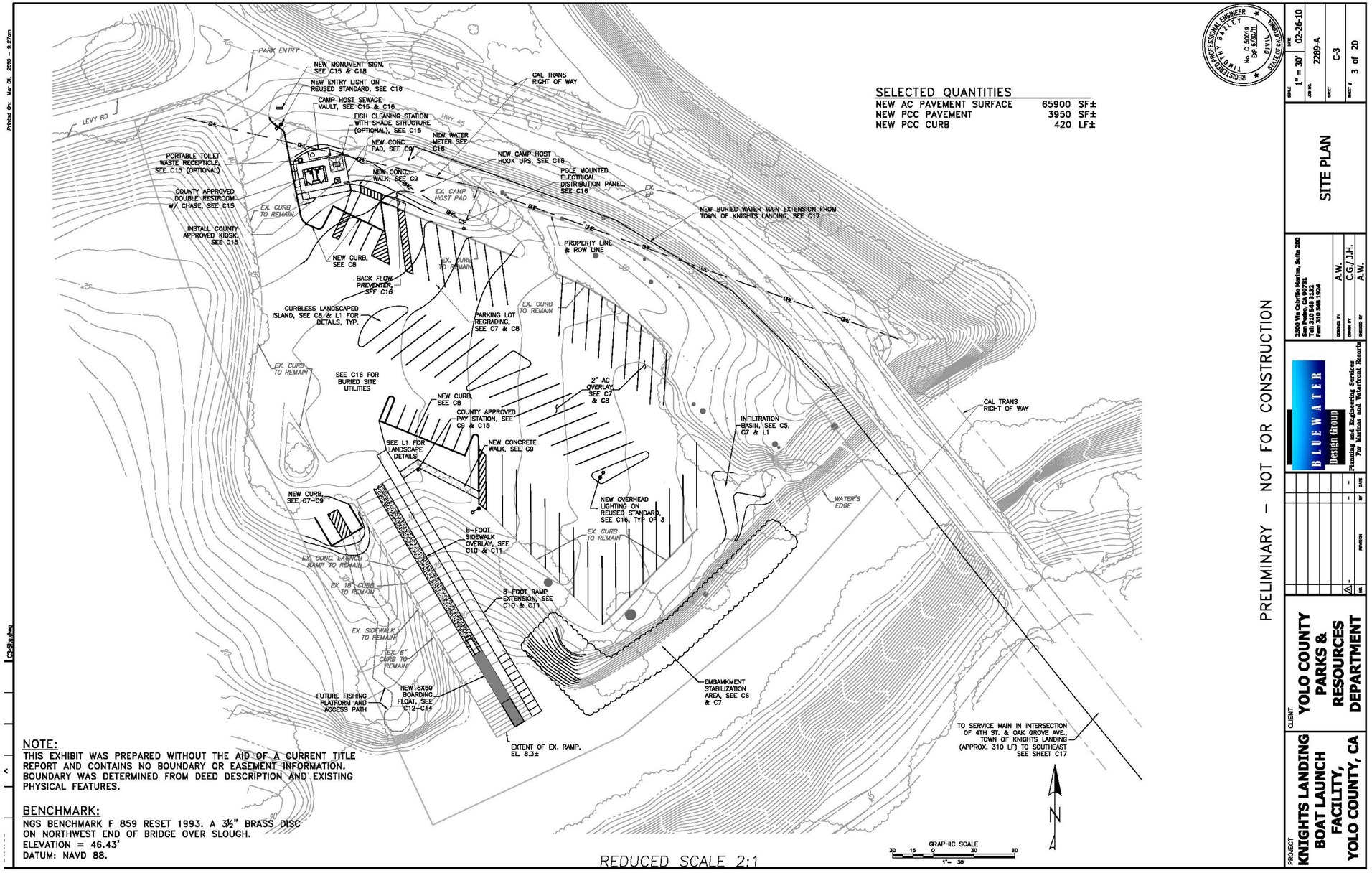


Figure 2
Project Area Map

Figure 3
Boat Ramp Site Plan



SELECTED QUANTITIES

NEW AC PAVEMENT SURFACE	65900 SF±
NEW PCC PAVEMENT	3950 SF±
NEW PCC CURB	420 LF±

NOTE:
THIS EXHIBIT WAS PREPARED WITHOUT THE AID OF A CURRENT TITLE REPORT AND CONTAINS NO BOUNDARY OR EASEMENT INFORMATION. BOUNDARY WAS DETERMINED FROM DEED DESCRIPTION AND EXISTING PHYSICAL FEATURES.

BENCHMARK:
NGS BENCHMARK F 859 RESET 1993. A 3½" BRASS DISC ON NORTHWEST END OF BRIDGE OVER SLOUGH.
ELEVATION = 46.43'
DATUM: NAVD 88.

REDUCED SCALE 2:1

REGISTERED PROFESSIONAL ENGINEER ANDREW WATTEY No. C 50019 Exp. 6/30/11 STATE OF CALIFORNIA

PRELIMINARY – NOT FOR CONSTRUCTION

Plotted On: Mar 01, 2010 – 5:27pm
C:\Site.dwg

BLUEWATER Design Group
Planning and Resource Consulting Services
Port Marinas and Waterfront Resorts
2530 Via Cabrillo Marina, Suite 200
San Pedro, CA 90731
Tel: 310 548 1575
Fax: 310 548 1524

DRAWN BY: A.W.
CHECKED BY: C.G./J.H.
APPROVED BY: A.W.

SCALE: 1" = 30'
DATE: 02-26-10
JOB NO.: 2289-A
SHEET: C-3
SHEET # 3 of 20

SITE PLAN

NO.	REVISION	BY	DATE
1			
-			

CLIENT
YOLO COUNTY PARKS & RESOURCES DEPARTMENT

PROJECT
KNIGHTS LANDING BOAT LAUNCH FACILITY, YOLO COUNTY, CA

Although some of the proposed improvements would expand the existing facility, such as enlarging the boat launch ramp, the facility expansions are intended to provide safer and more efficient service to existing patrons. Proposed expansion activity is not anticipated to increase patronage of the facility.

Project design includes various measures to control potential sources of water pollution both during project construction, and throughout project operation. In particular, construction of the proposed project would include installation and maintenance of silt curtains and/or turbidity barriers. Silt curtains and turbidity barriers would restrict any turbidity plumes caused by in-water project construction activity, thus protecting water quality during project construction.

Funding for the proposed project has been awarded through a grant from the California Department of Fish and Wildlife's (CDFW) WCB.

Determination

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 applicant. 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" 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 Environmental Impact Report (EIR) pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

By: _____ Date: 9/19/2017

Kevin Yarris
Director, General Services Department
County of Yolo

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Appendices

NEED FOR PROPOSED ACTION

The County has operated the Knights Landing Boat Launch facility since the County entered into a management agreement with the WCB in 1978. Upon entering the management agreement, the County constructed improvements to the existing facility first in 1978, and additional improvements in 2000. Improvements included extending the boat ramp with precast concrete sections and installing aluminum boarding floats.

The existing facility serves as one of only three public river access points along the Sacramento River managed by Yolo County. Although five-year revenue trends analyzed by the County lead to an estimated usage of 2,100 vehicles visits per year, this figure most likely represents a significant underestimation. A year-long usage study of all parks within the County indicated that there is a 70-80 percent seepage from the non-payment of user fees throughout the park system. Based on the estimated non-payment rate, the existing facility likely serves approximately 7,200 vehicles annually, and between 14,400 to 28,000 visitors. The heavy visitation, limited availability of alternative sites, and limited existing facilities, leads to high demand on the existing facilities. During peak demand, from March through December, the single lane boat ramp is often in constant use, which can create hazards as vehicles vie for access. Table 1 below presents some of the communities that are within an hour's drive of the facility, and provides the potential populations served by the existing facility.

Table 1
Nearby Population Centers

Name of City or Community	Distance to Site (miles)	Population
Woodland	8	57,000
Davis	15	66,000
West Sacramento	19	50,000
Dixon	32	19,000
Vacaville	42	92,000
Napa	51	140,000
Yuba City/Marysville Urban Area	35	92,000
Sacramento	25	480,000
Other Sacramento Urban Area Cities and Unincorporated Areas	20-45	1,200,000
	Population Sub-Total	2,196,000

Source: Yolo County General Services Department. 2017.

Providing new and improved amenities at the site would increase site safety and convenience, and help alleviate existing congestion during high-use periods. In addition, the proposed improvement to the self-pay system is anticipated to capture lost revenue from existing site patronage.

Funding for Facility Upgrades

In 2008, Yolo County accepted a design grant from the California Department of Boating and Waterways (DBW) for capital improvement projects at the Knights Landing Boat Launch Facility. The DBW grant, which provided funding for 100 percent engineering plans, was completed in 2015. Following completion of engineering plans the County of Yolo applied for, and was awarded funding by, the WCB. The funding awarded by the WCB as well as funding provided by Yolo County would be used to complete permitting, engineering, and construction of the project.

Purpose of Initial Study Mitigated Negative Declaration

This IS/MND describes the environmental resources in the project area; evaluates the effects of the proposed project on these resources; and proposes measures to avoid, minimize, or mitigate any adverse effects to a less-than-significant level. The information and analysis presented in this document are organized in accordance with the order of the California Environmental Quality Act (CEQA) checklist in Appendix G of the CEQA Guidelines.

The mitigation measures prescribed for environmental effects described in this Initial Study will be implemented in conjunction with the project, as required by CEQA. The mitigation measures will be incorporated into the project through project conditions of approval. The County will adopt findings and a Mitigation Monitoring and Reporting Program for the project in conjunction with its approval of the project.

Previous Environmental Documents

In April 2006, the Parks & Natural Resources Management Division of the Planning, Resources and Public Works Department of Yolo County prepared an IS/ND for renovation of the Knights Landing Boat Launching facility. The 2006 IS/ND was prepared in accordance with CEQA, and concluded that the expansion of the Boat Launching facility, proposed at that time, would not result in any impacts to the environment. The project analyzed in the 2006 IS/ND was substantively similar to the currently proposed project; however, the 2006 project included construction of an automated fish cleaning station, connection to the Knights Landing Service District to provide water service at the site, and removal of existing wooden piers in Sycamore Slough, none of which are included in the proposed project. Rather than connecting to the Knights Landing Service District, the currently proposed project includes construction of an on-site water well. The State Clearing House Number for the 2006 IS/ND was 2006042146 and a Notice of Determination (NOD) for the project was issued in 2010.

PROJECT DESCRIPTION

The proposed project would include various activities involved in the renovation and improvement of the existing Knights Landing Boat Launch Facility. Renovations would focus on improving the existing facilities, and ensuring that the facility can continue to meet local demand

for the next 40-50 years. The specific improvements are discussed within the Purpose and Need section of this IS/MND. The proposed project would involve pre-construction activities, construction, and operational activities.

Pre-Construction Activities

Prior to the initiation of work on the project, all necessary Federal, State, and County permits must be obtained, and approvals granted. Necessary permits and approvals would include:

- USACE Section 404 Clean Water Act (CWA) Permit;
- USACE Section 408 CWA Permit;
- Section 401 Water Quality Certification;
- Section 1602 Streambed Alteration Agreement;
- Central Valley Flood Protection Board Encroachment Permit;
- U.S. Fish and Wildlife Endangered Species Act Section 7 permitting;
- National Marine Fisheries Service Endangered Species Act Section 7 permitting;
- State Lands Commission Land Use Agreement;
- Yolo County Flood Hazard Permit;
- Yolo County Building Permit;
- Yolo County Grading Permit;
- Pacific Gas & Electric (PG&E) Service Agreement;
- Sewer Service Agreement; and
- Water Well Permit from the Environmental Health Division of Yolo County.

Construction Activity

Once the required permitting and approvals have been completed for the proposed project, construction of the proposed project may commence. Construction of the project would be managed by the General Services Department of Yolo County. A construction contractor would be selected through a competitive bidding process. Construction activity is anticipated to last for approximately six-months.

Operational Activity

Following completion of construction activity, the Parks Division of the Yolo County General Services Department, would be responsible for the long-term management of the site and project. Successful management of the facility will be maintained based on the following factors:

- Maintain the site to a standard that attracts boaters to the boat launch facility;
- Meet current and long-range needs of the community and of boaters in the region;
- Successfully maintain the boat launch facility infrastructure; and
- Capture accurate revenue generated by launch utilization in order to fund additional features.

To facilitate the long-term maintenance and management plan, Yolo County proposes the following management plan, broken into five categories:

- Regular Maintenance: Park host would reside on the property to perform daily observation of the site, and full-time park maintenance staff would visit the site on a regular basis to perform maintenance;
- Major Maintenance: Park host would reside on the property to perform daily observation and report potential issues to division staff. Full-time park maintenance staff would visit the site on regular basis and perform annual inspections to identify facilities that require repair and/or replacement.
- Staff: Park maintenance staff would visit the site on a regular basis to clean and inspect the facility. Park maintenance staff would wear a standard County-issued uniform, and be professional in appearance and manner in which they interact with the public. Park host would reside on site to assist the public.
- Operations and Administration: The site is open year-round, from dawn to dusk, except during periods of high water when the site is closed for public safety. The Parks Division has a staff of eight and one park host that can respond to complaints. The project would improve traffic circulation at the site, which should increase usage and reduce calls for staff assistance.
- Security: Yolo County Sheriff's Department regularly patrols the site as part of their routine patrol. Future resident park hosts would provide additional oversight at the site. The project site would be lit at night. Security cameras will be installed as part of the project.

AFFECTED RESOURCES AND ENVIRONMENTAL EFFECTS

The following sections will analyze the proposed project's potential to affect environmental resources.

Resources Not Considered in Detail

Considering the nature of the proposed project, the project would not have the potential to result in any environmental effects to certain resource areas. The resource areas judged not to be impacted by the proposed project are discussed in this section.

<u>Agricultural and Forestry Resources</u>

Standards of Significance
Would the Project:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
- 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));
- Result in the loss of forest land or conversion of forest land to non-forest use;
- Conflict with existing zoning for agricultural use, a Williamson Act contract, or a Farmland Security Zone; or
- Involve other changes in the existing environment which due to their location or nature, could result in conversion of farmland, to non-agricultural use?

The proposed project site is currently developed and operated as the Knights Landing Boat Launch facility. As such, agricultural or timber harvesting activities do not currently occur on the project site. The soils underlying the project site are characterized as sandy loam, which is considered suitable for agricultural activities when irrigated and properly drained. However, considering the project site's current use as a boat launch facility, and that the site is designated and zoned as OS and POS, respectively, the project site could not currently be used for agricultural purposes or timberland harvesting activities. Therefore, ***no impacts*** would result from the proposed renovation of the existing facility with regard to agricultural and forestry resources.

Flooding Hazard

Standards of Significance
Would the Project:
- Place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year floodplain structures which would impede or redirect flood flows;
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Inundation by seiche, tsunami, or mudflow?

The project site is located in a 100-year floodplain as designated by the Federal Emergency Management Agency (FEMA).[1] Additionally, the project site is located in an area vulnerable to flooding related to the failures of dams located upstream on the Sacramento River.[2] However, the only new structure included in the proposed project would be a 350-sf restroom facility. Considering the small size of the restroom facility, the proposed structure would not be considered a significant impediment to flood flows. Furthermore, the project does not include any larger structures or linear features that could redirect or impeded flood flows. Thus, the project would not result in the placement of structures within a 100-year floodplain that would impede or redirect flood flows. Although a camp host pad is located on the project site, the camp host is not a permanent resident, and permanent structures are not proposed for construction on the camp host site.

[1] Federal Emergency Management Agency. *Flood Insurance Rate Map: Map Number 06113C0315G*. June 18, 2010.
[2] County of Yolo. *2030 Countywide General Plan* [pg. HS-13]. November 10, 2009.

The project site is located immediately downstream of a dam and adjacent to a levee. The dam is a water retention structure, located on Sycamore Slough managed by the local reclamation district for irrigation purposes. The structure is annually inspected by the State and is inspected and managed daily by the reclamation district. Therefore, catastrophic, unpredicted failure of the Sycamore Slough dam is not considered likely. Nevertheless, the proposed project is a recreational facility, consisting mainly of paved areas. Although some damage to the project site would be anticipated, the proposed project does not involve operations of permanent residences or substantial structures that would be at risk from flood damage.

Furthermore, the water impounded by the dam is not considered large enough to be subject to seiche. Finally, the project site is located in a relatively flat, inland area of the State. Given the location of the project site, mudflows and tsunamis would not impact the proposed project. Therefore, the proposed project would result in ***no impact*** related to flooding or flood hazards.

Land Use

Standards of Significance
Would the Project:

- Have a substantial effect on an established community;
- Conflict with an applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect set forth by an agency with jurisdiction over any of the erosion sites that together make up the project; or
- Substantially conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan, or other approved local, regional, or State HCP?

The project site is located within the community of Knights Landing; however, the project site is separated from the rest of the community by Sycamore Slough. The site is designated and zoned as OS and POS, respectively, for use as open space and recreation activities. The proposed project would renovate the existing facilities at the project site, and, thus, would continue to use the project site in compliance with the designated land use and zoning for the site. Although the proposed project would involve renovation of a facility within the community of Knights Landing, the renovations are not anticipated to substantially alter operations at the project site or result in increased use of the site. Therefore, the proposed project is not anticipated to have a substantial effect on an established community.

A Public Review Draft of the Yolo Habitat Conservation Plan/Natural Community Conservation Plan (Yolo HCP/NCCP) was released for public review on June 1, 2017. If approved and adopted, the Yolo HCP/NCCP would provide coverage for the operation and renovation of the existing boat launch facility.[3] However, because the Yolo HCP/NCCP has not yet been adopted, a HCP/NCCP covering the project site does not yet exist. As such, the proposed project would not conflict with an adopted HCP/NCCP, and ***no impact*** would occur.

[3] Yolo Habitat Conservancy. *Yolo Habitat Conservation Plan/Natural Community Conservation Plan* [pg. 3-37]. May 2017.

Mineral Resources

Standards of Significance
Would the Project:

- 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; or
- 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?

The project site is not designated as an area of significant aggregate deposits as classified by the State Department of Mines and Geology. Therefore, the proposed project would not result in the loss of known mineral resources, and ***no impact*** related to mineral resources would occur.

Population and Housing

Standards of Significance
Would the Project:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure);
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

The proposed project includes renovation of the existing Knights Landing Boat Launch Facility. Although permanent housing does not currently exist on the project site, a camp host site does exist within the project site, which is used for seasonal housing for one camp host. The camp host site would be improved with utility access, and would continue to serve as a camp host site following the construction activity related to the proposed project. Because substantial numbers of people do not live on the project site currently, and substantial numbers of existing housing do not exist on the project site, the proposed project would not displace substantial amounts of people or housing.

The project site currently serves as a boat launch facility. The proposed project would involve renovation of the existing facility, which would include repaving, various improvements, and expansion of some parking areas and the boat launch ramp within the project site. Although the proposed project would include some expansion activity, such activity is intended to service the existing population, and help meet existing demand on the facility. Therefore, the project is not anticipated to induce substantial population growth.

Considering the above, the proposed project would result in ***no impacts*** related to the displacement of people or housing, or the inducement of population growth.

Public Services

Standards of Significance
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, 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 public services:

- Fire protection;
- Police protection;
- Schools;
- Parks; or
- Other Public Facilities?

The project site is currently developed as the Knights Landing Boat Launch Facility. The existing facility is served by fire protection and police protection services. The proposed project is not anticipated to increase the current demand for fire or police protection services from the project site because operations of the boat launch facility are not anticipated to substantially increase upon implementation of the proposed project. Furthermore, the project site is used for recreational purposes, and, thus, operations of the proposed project would not increase demand on schools, parks, or other public facilities. Therefore, the proposed project would have ***no impact*** related to Public Services.

Recreation

Standards of Significance
Would the Project:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
- Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

The existing Knights Landing Boat Launch Facility serves as a recreational facility and provides public access to the Sacramento River. The proposed project involves improvements and renovations to the existing facility, which would facilitate continued and more efficient use of the project site for recreational purposes. The project would not increase demand on other recreational facilities; rather, the project would help to meet the existing demand for such facilities. Therefore, the proposed project would result in ***no impact*** related to recreation.

Socioeconomics

Standards of Significance
Would the Project alter the demographic make-up of the project area or create economic hardship for residents of the project area?

The proposed project involves renovation of the existing Knights Landing Boat Launch Facility. The project would not involve the displacement of residents or significant changes in the economy of the project area. Rather, the proposed project seeks to meet the demand that currently exists on the Knights Landing Boat Launch Facility. Construction activity related to the proposed project would be limited to the project site, and would be of relatively short duration, lasting approximately six months. Furthermore, construction activity would consist of repaving the existing parking areas, expanding the boat launch, construction of a water well, and various other small improvements throughout the site. Such construction activity would not be anticipated to have the potential to substantially interfere with the nearby community. As such, the proposed project would not be anticipated to result in any impacts related to the socioeconomics of the project area, and ***no impact*** would occur.

Potentially Affected Resources

The following sections discuss potential environmental impacts that could result from the implementation of the proposed project. Each section provides an overview of the existing conditions at the project site, followed by standards of significance with which to judge potential impacts, as well as a discussion of potential effects of the proposed project.

Aesthetics and Visual Resources

Existing Conditions

The project site consists of the existing Knights Landing Boat Launch Facility, which includes a paved parking area, drive aisles, a single-lane boat launch, signage, landscaping vegetation, chemical restrooms and a camp host site. The area surrounding the boat launch ramp consists predominantly of grasses and bare soil, with some larger trees and shrubs. Officially designated State scenic highways do not exist in the project area.[4] Furthermore, the project site does not contain any scenic vistas, and scenic vistas are not known to occur in the immediate vicinity of the project site.

Standards of Significance
Would the Project:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;

[4] California Department of Transportation. *California Scenic Highway Mapping System*. Available at http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/. Accessed June 2017.

- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

Effects

The proposed project would involve improvement of the existing Knights Landing Boat Launch Facility through repaving the parking areas, expanding the boat launch area, constructing a new permanent restroom facility, installing information signage, and upgrading site landscaping.

Scenic Views and State Scenic Highways

Additional native vegetation would be planted as part of the project, which would buffer and screen the proposed restroom view from State Route (SR) 45. The adjoining roadways and highways are not listed or designated as a "scenic highway" and, because the project site is located in a backwater slough adjoining the Sacramento River, scenic resources or views do not exist at the project site. Furthermore, the only structure included in the proposed project that could impede views across the project site is a 350-sf restroom facility. Given the limited size of the restroom facility, the structure would not be anticipated to block any existing views across the site. Therefore, the proposed project would result in a ***less-than-significant*** impact related to adverse effects on scenic views or visual resources in proximity to an officially designated scenic highway.

Visual Character and Quality

The project site is currently used as a boat launch facility with extensive infrastructure to support such use. The proposed project would renovate the existing facility and expand upon the existing uses. Such a renovation would not degrade the existing visual character or quality of the site, and is instead intended to maintain the current use and improve the character of the site. Therefore, the proposed project would result in a ***less-than-significant*** impact related to substantially degrading the existing visual character or quality of the site.

Light and Glare

The parking lot is currently lit with overhead standards on wooden poles. The proposed restroom building and improved camp host pad would be lit for safety and security. Any new outdoor lighting will include light fixtures that are low-intensity, shielded and/or directed away from adjacent properties in order to minimize glare and overspill on adjacent parcels, the night sky, and the public right-of-way. Vegetation is proposed adjacent to SR 45 that will screen and buffer the light source from the roadway. The project site is separated from the nearest existing structures by the Sycamore Slough and a high levee along the southwest side of the slough. Although residences exist along the

southwest side of the levee, the levee obscures all views of the project site from the nearby residences. Therefore, the proposed project site would not be seen from the community of Knights Landing, and would result in a ***less-than-significant*** impact related to light and glare.

Air Quality and Climate Change

Existing Conditions

Yolo County is located within the Sacramento Valley Air Basin (SVAB) and under the jurisdiction of the Yolo-Solano Air Quality Management District (YSAQMD). The federal Clean Air Act (CAA) and the California Clean Air Act (CCAA) require that federal and State ambient air quality standards (AAQS) be established, respectively, for six common air pollutants, known as criteria pollutants. The SVAB is designated nonattainment for the federal particulate matter 2.5 microns in diameter ($PM_{2.5}$) and the State particulate matter 10 microns in diameter (PM_{10}) standards, as well as for both the federal and State ozone standards.

The CAA requires each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The SIPs are modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins, as reported by their jurisdictional agencies. Due to the nonattainment designations, YSAQMD, along with the other air districts in the SVAB region, periodically prepares and updates air quality plans that provide emission reduction strategies to achieve attainment of the federal AAQS, including control strategies to reduce air pollutant emissions via regulations, incentive programs, public education, and partnerships with other agencies.

General conformity requirements of the SIP include whether a project would cause or contribute to new violations of any federal AAQS, increase the frequency or severity of an existing violation of any federal AAQS, or delay timely attainment of any federal AAQS. In addition, a project would be considered to conflict with, or obstruct implementation of, an applicable air quality plan if the project would be inconsistent with the emissions inventories contained in the air quality plan. Emission inventories are developed based on projected increases in population, employment, regional vehicle miles traveled (VMT), and associated area sources within the region, which are based on regional projections that are, in turn, based on General Plans and zoning designations for the region.

Due to the nonattainment designations of the area, YSAQMD has developed plans to attain the State and federal standards for ozone and particulate matter. The plans include the 2013 Ozone Attainment Plan, the $PM_{2.5}$ Implementation/Maintenance Plan, and the 2016 Triennial Assessment and Plan Update. Adopted YSAQMD rules and regulations, as well as the thresholds of significance, have been developed with the intent to ensure continued attainment of AAQS, or to work towards attainment of AAQS for which the area is currently designated nonattainment, consistent with applicable air quality plans. Thus, by exceeding the YSAQMD's mass emission thresholds for operational or construction emissions of ROG, NO_X, or PM_{10}, a project would be

considered to conflict with or obstruct implementation of the YSAQMD's air quality planning efforts. The YSAQMD mass emission thresholds for operational and construction emissions are shown in Table 2 below.

Table 2
YSAQMD Thresholds of Significance

Pollutant	Construction Thresholds	Operational Thresholds
ROG	10 tons/yr	10 tons/yr
NO_X	10 tons/yr	10 tons/yr
PM_{10}	80 lbs/day	80 lbs/day

Source: YSAQMD. Handbook for Assessing and Mitigating Air Quality Impacts. July 11, 2007.

Greenhouse Gas Emissions and Climate Change

Emissions of greenhouse gases (GHGs) contributing to global climate change are attributable in part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on earth. An individual project's GHG emissions are at a micro-scale level relative to global emissions and effects to global climate change; however, an individual project could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. As such, impacts related to emissions of GHG are inherently considered cumulative impacts.

A number of regulations currently exist related to GHG emissions, predominantly Assembly Bill (AB 32), Executive Order S-3-05, and Senate Bill (32). AB 32 sets forth a statewide GHG emissions reduction target of 1990 levels by 2020. Executive Order S-3-05 sets forth a transitional reduction target of 2000 levels by 2010, the same target as AB 32 of 1990 levels by 2020, and further builds upon the AB 32 target by requiring a reduction to 80 percent below 1990 levels by 2050. SB 32 also builds upon AB 32 and sets forth a transitional reduction target of 40 percent below 1990 levels by 2030. In order to implement the statewide GHG emissions reduction targets, local jurisdictions are encouraged to prepare and adopt area-specific GHG reduction plans and/or thresholds of significance for GHG emissions. Yolo County has adopted a Climate Action Plan (March 15, 2011) that is intended to fulfill the requirements of state legislation, including those regulations described above. The Climate Action Plan sets forth GHG emission reduction targets for the County consistent with the statewide reduction targets.

In the District's *Handbook for Assessing and Mitigating Air Quality Impacts*, the YSAQMD acknowledges that new emissions generated by development projects could potentially conflict with existing GHG emissions reductions targets, and thus a need for development of GHG emissions thresholds exists. However, the District has not yet prepared such thresholds. In addition, the County's Climate Action Plan does not set forth project-specific GHG emission reduction targets, but rather overall, countywide targets and associated reduction measures. In the absence of thresholds of significance, the YSAQMD is currently recommending GHG analysis consistent with Sacramento Metropolitan Air Quality Management District's (SMAQMD)

approach. The SMAQMD adopted the following CEQA thresholds of significance for GHG emissions on October 23, 2014:

- 1,100 $MTCO_2e$ per year for construction and operational GHG emissions; and
- 10,000 direct $MTCO_2e$ per year for stationary sources.

The thresholds of significance established by SMAQMD, and used by YSAQMD, were developed to identify emissions levels for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions needed to move towards climate stabilization. Because the County's Climate Action Plan includes GHG emission reduction targets consistent with the statewide reduction targets, use of the thresholds of significance presented above would also be expected to address consistency with the Climate Action Plan.

Standards of Significance

Would the Project:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people;
- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?

Effects

The proposed project would involve the renovation and improvement of the existing Knights Landing Boat Launch Facility. Renovation of the facility would involve construction activities, such as repaving, expansion of the boat launch ramp, re-striping the parking lot, construction of an on-site well, and construction of a new restroom facility. During construction of the proposed project, various types of equipment and vehicles would temporarily operate on the project site. Construction exhaust emissions would be generated from construction equipment, vegetation clearing and earth movement activities, construction workers' commute, and construction material hauling for the entire construction period. The aforementioned activities would involve the use of diesel- and gasoline-powered equipment that would generate emissions of criteria pollutants. Project construction activities also represent sources of fugitive dust, which includes PM_{10} emissions.

Although the renovations and improvements included in the proposed project would involve construction related emissions, emissions from operation of the proposed project would only differ slightly from existing operations. Renovations and improvements included in the proposed project are not anticipated to result in an increase facility usage. Instead, the proposed project is intended to improve the facility to better serve the patrons that currently use the project site. The majority of operational emissions from the facility are attributable to patrons driving to and from the project site. The proposed project would not result in any significant changes to operational emissions from the facility because the proposed project is not anticipated to alter the number of patrons using the facility.

Potential impacts related to air quality and greenhouse gas emissions are discussed in further depth in the following sections.

Criteria Air Pollutant Emissions and Air Quality Plans

As discussed above, operational emissions of air pollutants are not anticipated to change under the proposed project. Air quality plans are prepared by each state, as well as areas within states that are designated as nonattainment for criteria air pollutants. Projects may be considered to conflict with, or obstruct implementation of, an applicable air quality plan if the project would be inconsistent with the emissions inventories contained in the air quality plan. Emission inventories are developed based on projected increases in population, employment, regional VMT, and associated area sources within the region, which are based on regional projections that are, in turn, based on General Plans and zoning designations for the region. The proposed project would be consistent with the existing County General Plan land use designation and zoning for the site. Therefore, the proposed project would be expected to be consistent with emissions inventories within the SIP.

However, construction activity during the renovation and improvement of the existing facility would have the potential to involve the release of criteria pollutants including ROG, NO_X, and PM_{10}. Construction of the proposed project is anticipated to begin in summer of 2018, and would require repaving of the existing parking area as well as various other improvements. Overall, approximately 500 cubic yards (CY) of material is anticipated to be imported to the project site while approximately 500 CY of material is anticipated to be exported during demolition, site preparation and grading of the site. Following preparation of the facility, the project would involve repaving and restriping of approximately 60 parking spaces over 1.5 acres of the project site, construction of a 350-sf restroom facility, and expansion of the boat launch ramp by approximately 2,000 sf.

The construction-related emissions from the activities described above were estimated, and are presented in Table 3 below.

Table 3 Maximum Project Construction-Related Emissions		
Pollutant	**Project Emissions**	**YSAQMD Thresholds of Significance**
ROG	0.20 tons/yr	10 tons/yr
NO_X	1.56 tons/yr	10 tons/yr
PM_{10}	11.87 lbs/day	80 lbs/day
Source: CalEEMod, June 2017.		

As shown in Table 3, the proposed project's construction emissions ROG, NO_X, and PM_{10} would be below the applicable YSAQMD thresholds of significance. Therefore, the proposed project's construction-related emissions would not result in a contribution to the region's nonattainment status of ozone or PM, and would not violate an air quality standard or contribute substantially to an existing or projected air quality violation.

Based on the above analysis, the proposed project would not conflict with or obstruct implementation of the applicable air quality plan, contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase of any criteria pollutant, and a ***less-than-significant*** impact would occur.

Exposure of Sensitive Receptors to Substantial Pollutant Concentrations

Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, childcare centers, playgrounds, retirement homes, convalescent homes, hospitals, and medical clinics. The nearest existing sensitive receptors would be the single-family residences located approximately 300 feet away from the project site, across Sycamore Slough.

Due to their potential health effects, the major pollutant concentrations of concern are localized carbon monoxide (CO) emissions and toxic air contaminant (TAC) emissions. Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. Implementation of the proposed project would not substantially increase traffic volumes on streets near the project site, and the project site is not located in the vicinity of any high-volume intersections. Thus, the proposed project would not cause any substantial levels of localized CO emissions at any intersection.

Major sources of TACs include, but are not limited to, freeways and high traffic roads, distribution centers, and rail yards. The proposed project would not involve the creation of any sources of TAC emissions and is not located in the vicinity of any major existing sources of TACs. In addition to the foregoing sources of TACs, construction activities can often represent a source of TACs due to the use of diesel engines in construction equipment or portable generators. However, construction is temporary and occurs over a relatively short duration in comparison to

the operational lifetime of the proposed project. All construction equipment and operation thereof would be regulated per the In-Use Off-Road Diesel Vehicle Regulation, which is intended to help reduce emissions associated with off-road diesel vehicles and equipment, including PM from diesel engines. Project construction would also be required to comply with all applicable YSAQMD rules and regulations, particularly those associated with permitting of air pollutant sources.

Health risks associated with TACs are a function of both the concentration of emissions and the duration of exposure, where the higher the concentration and/or the longer the period of time that a sensitive receptor is exposed to pollutant concentrations would correlate to a higher health risk. Due to the temporary nature of construction and the relatively short duration of potential exposure to associated emissions, the nearest residential sensitive receptor, which is located over 300 feet away from the project site, would not be exposed to pollutants for a permanent or substantially extended period of time.

Therefore, the proposed project would not expose any sensitive receptors to substantial concentrations of any pollutants, and impacts would be ***less than significant***.

Objectionable Odors

Odors are generally regarded as an annoyance rather than a health hazard. Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, quantitative methodologies to determine the presence of a significant odor impact do not exist. Certain land uses such as wastewater treatment facilities, landfills, confined animal facilities, composting operations, food manufacturing plants, refineries, and chemical plants have the potential to generate considerable odors. The project site is not located in the vicinity of any such existing or planned land uses. In addition, the proposed project would not involve any operations that would create objectionable odors. Although less common, diesel fumes associated with construction equipment and delivery trucks could be found to be objectionable; however, construction activities are minor and would be temporary. In addition, all construction equipment and operation thereof would be regulated per the statewide In-Use Off-Road Diesel Vehicle Regulation. Construction equipment would also be required to comply with applicable YSAQMD rules and regulations, particularly associated with permitting of air pollutant sources. The aforementioned regulations would help to minimize air pollutant emissions as well as any associated odors.

Operation of the existing boat launch facility includes portable chemical toilets that are periodically drained and cleaned. The proposed project includes replacement of the existing portable chemical toilets with a permanent restroom facility including a wastewater vault. Wastewater would collect in the permanent vault facility before being collected and transported off-site for treatment. Operation of the permanent restroom facility would be anticipated to reduce restroom odors as wastewater would be stored in a below ground vault, which would be protected from direct sunlight, and properly vented. The facility would be maintained by Park Maintenance staff, which would allow for periodic cleaning and treatment for excessive odors.

The production of odors from restroom facilities on-site would be anticipated to be reduced because the proposed project would involve replacement of existing portable chemical toilets with permanent vault toilets.

Considering the above, the proposed project would not create objectionable odors affecting a substantial number of people, and a ***less-than-significant*** impact would occur.

GHG Emissions

Operations of the facility following implementation of the proposed project would remain unchanged from current operations. Therefore, in the same manner as for construction-related criteria pollutants, the GHG emissions related to construction activity for the proposed project were estimated. The results of the GHG emissions estimation are provided in Table 4 below.

Table 4
Project Construction-Related GHG Emissions

	Annual GHG Emissions ($MTCO_2e$/yr)	**Threshold of Significance ($MTCO_2e$/yr)**
Construction-Related GHG Emissions	164.05	1,100
Source: CalEEMod, June 2017.		

As shown in Table 4, the proposed project would generate 164.05 $MTCO_2e$/yr during construction, which is well below the SMAQMD standard of 1,100 $MTCO_2e$/yr. Therefore, the proposed project would not generate significant GHG emissions or conflict with the YSAQMD recommendations during construction.

Once the site improvements are completed, the proposed project would involve operations including vehicle trips coming and going to and from the site, site lighting, and the new automated pay station. The continued operation of patron vehicles at the site would not be altered by the proposed project, and an increase or decrease in GHG emissions from the vehicle activity at the site would not occur. Improvements to site lighting would involve operation of lighting fixtures with equal or improved energy efficiency, and such improvements would not be anticipated to increase site energy demand. Installation and operation of the new automated pay station would represent a new source of energy demand from the project site. However, the pay station is a small machine, which is unlikely to consume large amounts of energy. For the purposes of this analysis, and based off standard energy consumption rates for self-pay machines, the pay machine is anticipated to consume 1,000 kilowatt hours of energy per year. Power for the project site would be provided by Pacific Gas and Electric Company (PG&E), which reports an energy emissions factor of 435 pounds of carbon dioxide emissions per megawatt hour of energy produced.[5] Based off the above information, and as shown in the side calculations presented in Appendix B, the proposed pay machine would be anticipated to result in annual emissions of 0.20 $MTCO_2e$/yr. Such emissions would not be considered to represent a significant source of

[5] Pacific Gas and Electric Company. *Fighting Climate Change*. Accessible at https://www.pge.com/en_US/about-pge/environment/what-we-are-doing/fighting-climate-change/fighting-climate-change.page. Accessed July 2017.

GHG emissions. The proposed project is not anticipated to involve a substantial increase in vehicle trips from existing levels or substantial increases in energy consumption on-site such that GHG emissions associated with the increase would result in a significant impact on the environment or conflict with any adopted plan, policy, or regulation for reduction GHG emissions.

Because the proposed project would result in GHG emissions below the applicable thresholds of significance during both construction and operation, the proposed project would not be considered to conflict with applicable plans or policies related to the reduction of GHG emissions, including statewide and Yolo County Climate Action Plan GHG reduction targets. Therefore, the proposed project's GHG emissions would not be considered to have a significant impact on the environment or conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs, and impacts would be ***less than significant***.

Vegetation and Wildlife

Existing Setting

The approximately four-acre site slopes slightly from north to south on a gradient that corresponds to the gently sloping banks of Sycamore Slough. The elevation of the site on the north at the parking lot from SR 45 is approximately 44 feet above sea level. Ordinary high water of Sycamore Slough (the site's southern boundary) is at an elevation of approximately 17 feet.[6]

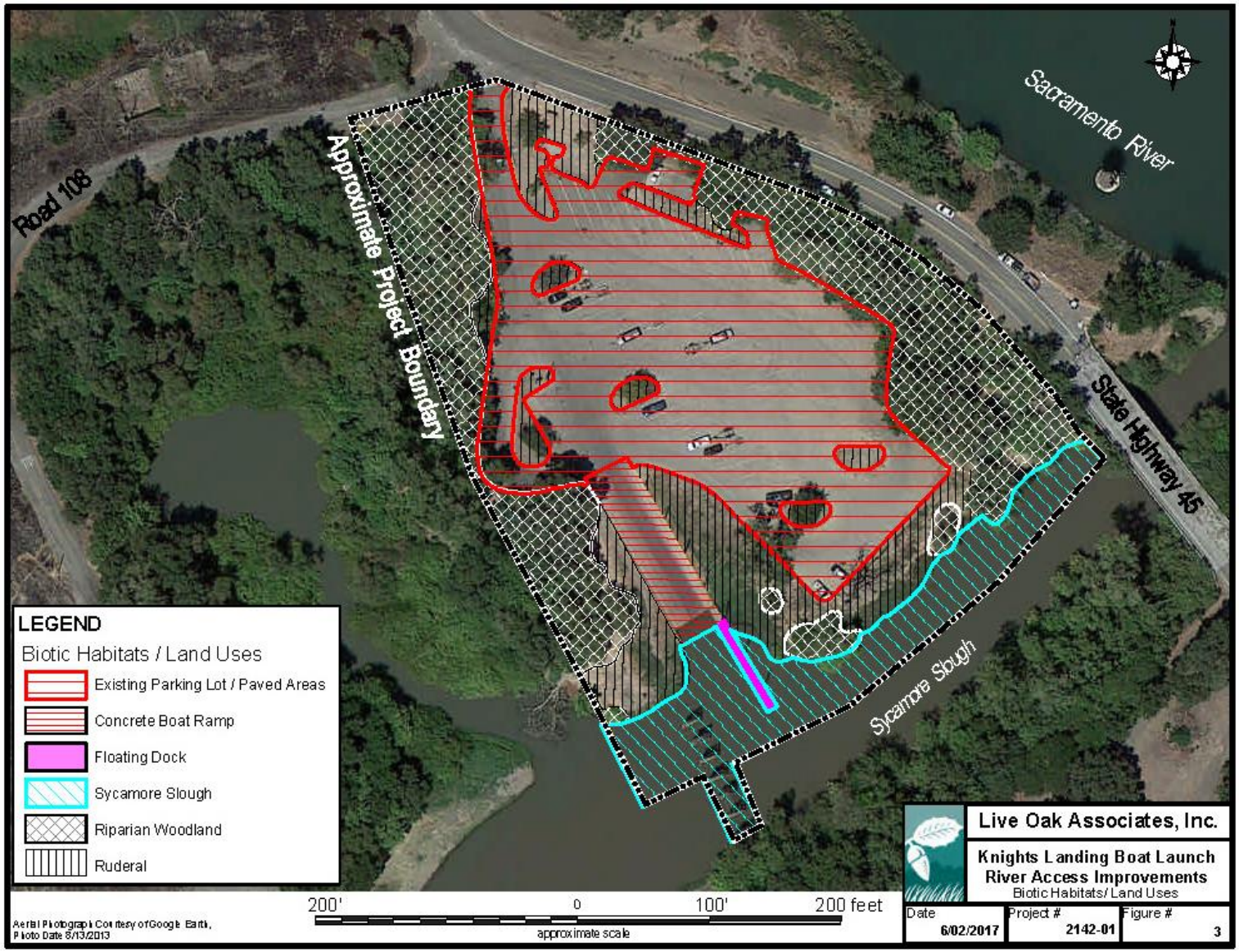
Four land use types/biotic habitats exist within the project site (see Figure 4). The habitat/land use types include a paved parking area that makes up a majority of the site, Great Valley mixed riparian forest, aquatic habitat of Sycamore Slough, and ruderal (disturbed) areas around the margin of the parking area.

Within the pavement area, three curb islands have been planted with landscaping trees. Non-native London plane trees (*Platanus X acerifolia*) are in two of the islands, and what appears to be a blue oak (*Quercus douglasii*), a tree native to the California Coastal Range and Sierra foothills is in the remaining island. The parking lot is intermittently used as foraging habitat for Brewer's blackbirds (*Euphagus cyanocephalus*). Other terrestrial vertebrates can pass over the parking area while moving from one vegetated habitat to another, but the parking area is not of importance to any terrestrial vertebrate species.[7]

[6] Live Oak Associates, Inc. *Biotic Evaluation Knights Landing Boat Launch Improvements Project*. July 18, 2017.

[7] *Ibid.*

Figure 4
Biotic Habitats/Land Uses



The Great Valley mixed riparian forest occurs around the margins of the developed facilities at the Knights Landing river access/boat launch site. The dominant tree of this forest is the valley oak (*Quercus lobata*), although subdominant trees include Oregon ash (*Fraxinus latifolia*), California black walnut (*Juglans hindsii*), box elder (*Acer negundo*), and Goodding's black willow (*Salix gooddingii*). Some trees are festooned with California grape (*Vitis californica*).

Understory shrubs are limited to poison oak (*Toxicodendron diversilobum*) and Himalayan blackberry (*Rubus discolor*).[8]

Fallen branches and leaves provide suitable cover for amphibians such as western toads (*Bubo boreas*) and Pacific chorus frogs (*Pseudacris regilla*). Amphibians could use the seasonal aquatic habitat of Sycamore Slough and the Sacramento River as breeding habitat. Flooded areas of the mixed riparian forest provide suitable habitat for the northern western pond turtle (*Actinemys marmorata*), while drier areas provide habitat for the California alligator lizard (*Elgaria multicarinatus multicarinatus*), which could occur within the leaf litter below valley oaks and other riparian trees. [9]

Snakes likely to occur intermittently within the project site include Pacific gopher snakes (*Pituophis catenifer catenifer*), California king snakes (*Lampropeltis californiae*), and valley garter snake (*Thamnophis sirtalis fitchi*). The giant garter snake (*Thamnophis gigas*) has been recorded as observed within eight miles of the project site. Giant garter snakes may also pass through the mixed riparian forest of the site.[10]

In addition, the mixed riparian forest provides habitat for a number of avian species. Resident passerine species include black phoebes (*Sayornis nigricans*), Western scrub jays (*Aphelocoma californica*), oak titmouse (*Baeolophus inornatus*), and acorn woodpeckers (*Melanerpes formicivorus*), among others. Resident wading birds commonly reported from both the aquatic habitat and the mixed riparian forest includes great blue herons (*Ardea Herodias*) and great egrets (*Ardea alba*). Resident raptors that may nest and roost in this habitat include great horned owls (*Bubo virginianus*), Cooper's hawks (*Accipiter cooperi*), red-shouldered hawks (*Buteo linneatus*), and red-tailed hawks (*Buteo jamaicensis*). Winter migrants may include white-crowned sparrows (*Zonotrichia sandwichensis*), golden-crowned sparrows (*Zonotrichia atricapilla*), and dark-eyed juncos (*Junco hyemalis*). Spring and summer migrants could include ash-throated flycatcher (*Myiarchus cinerascens*), Bullock's orioles (*Icterus bullockii*), and blue grosbeaks (*Passerina caerulea*).[11]

The Great Valley mixed riparian forests of the Sacramento Valley provide habitat also for several mammal species. Such species include Virginia oppossums (*Didelphis virginiana*), striped

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8 Live Oak Associates, Inc. *Biotic Evaluation Knights Landing Boat Launch Improvements Project*. July 18, 2017.

9 *Ibid.*

10 *Ibid.*

11 *Ibid.*

skunks (*Mephitis mephitis*), and raccoons (*Procyon lotor*). Live Oak Associates observed a juvenile red fox (*Vulpes vulpes*) during a field study at the project site on May 30, 2017.[12]
Sycamore Slough provides potential habitat for a large number of primarily warm water fish species, many of which are not native to the Sacramento River and its tributaries. Non-game native fish species that have been collected near the project site include three lamprey species (*Lampetra* sp.), Sacramento blackfish (*Orthodon microlepidotus*), Sacramento sucker (*Catostomus occidentalis*), and prickly sculpin (*Cottus asper*), among others. Non-native game fish species observed near the project site include white and black crappie (*Pomoxis nigromaculatus* and *P. annularis*, respectively), green sunfish, bluegill, redear sunfish (*Lepomis cyanellus*, *L. macrochirus*, and *L. micrlophus* respectively), and largemouth and smallmouth bass (*Micropterus salmoides* and *M. dolomieui*, respectively). The foregoing is a representative (but by no means comprehensive) list of the warm water species that may be present in Sycamore Slough from time to time.[13]

Ruderal areas are those frequently disturbed from human activity. Where ruderal vegetation was present, the common species included Bermuda grass (*Cyondon dactylon*), lesser swine cress (*Lepidium didymum*), prostrate knotweed (*Polygonum arenastrum*), and alkali mallow (*Malvella leprosa*). Ruderal areas adjacent to the Great Valley mixed riparian forest supported stands of wild radish (*Raphanus sativa*), poison hemlock (*Conium maculatum*), wild oats (*Avena fatua*), and prickly lettuce (*Lactuca serriola*). The use of ruderal areas of the project site by terrestrial vertebrate species would be incidental to their use of other habitats of the site. Like the paved parking lot, ruderal areas provided very limited habitat value to most species of terrestrial vertebrates.[14]

Standards of Significance

Would the Project:

- Interfere with the movement of any resident or migratory wildlife species;
- Result in the substantial loss, degradation, or fragmentation of any natural plant communities and wildlife habitat;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service; or
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Effects

The proposed project consists of renovation and improvement of the existing Knights Landing Boat Launch Facility.

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[12] Live Oak Associates, Inc. *Biotic Evaluation Knights Landing Boat Launch Improvements Project*. July 18, 2017.
[13] *Ibid.*
[14] *Ibid.*

Wildlife Movement Corridors

Sycamore Slough, the Sacramento River, and associated riparian vegetation facilitate movement of some wildlife through the Sacramento Valley. Therefore, the project site is within a likely wildlife movement corridor. However, the proposed project would not include any alterations to the largest native habitat on site (i.e., the Great Valley mixed riparian forest), and the habitat would remain undiminished and functional following implementation of the proposed project. Most of the disturbance associated with the proposed project would occur in the areas of the site that are already paved or are dominated by ruderal vegetation. As discussed above, the paved areas and the areas of ruderal vegetation on the project site represent poor habitat of low, if any value. Furthermore, the project does not involve the construction of any barriers that would impede the movement of wildlife through Sycamore Slough, along the Sacramento River, or to and from the existing riparian forest habitat on-site.[15] Because the proposed project would not impact Great Valley mixed riparian forest, and would not construct new barriers to the movement of wildlife across the site, the proposed project would result in a ***less-than-significant*** impact related to the interference of wildlife movement.

Adverse Effects on Riparian Habitats or Other Sensitive Natural Communities

The project site currently includes Great Valley mixed riparian forest habitat and wetland habitat. As discussed above, the riparian forest habitat would not be altered with implementation of the proposed project.

The Sycamore Slough below ordinary high water (i.e., 17 feet above sea level) is an aquatic habitat. The proposed project would involve placement of riprap and the expansion of the existing boat launch ramp, some of which would occur under the ordinary high water level. Such activities would only affect a total of approximately 0.23 acres.[16] Disturbance to the majority of the affected area, 0.17 acre, would be limited to the placement of rip-rap, which would serve to protect the wetland areas from continued erosion due to boat wake action. The remaining 0.05 acre would be disturbed by the expansion of the boat launch ramp. The placement of rip-rap and the installation of a concrete ramp is regulated by the USACE. In compliance with the provisions of Section 404 of the Clean Water Act, the County shall obtain a Department of the Army (DA) permit for the discharge of fill into a water of the United States. The project must also seek and obtain a California Water Quality Certification from the Regional Water Quality Control Board (RWQCB) to be in compliance with Section 401 of the Clean Water Act. Finally, the County would obtain a Streambed Alteration Agreement from the CDFW prior to implementation of the proposed project. The Streambed Alteration Agreement, California Water Quality Certification, and the Section 404 Permit would include conditions involving the avoidance and minimization of impacts, and possible conservation or replacement of habitat on the project site or elsewhere. Compliance with the aforementioned permits, agreements, and certifications would ensure that the proposed project complied with the USACE's "no-net-loss" policy.

[15] Live Oak Associates, Inc. *Biotic Evaluation Knights Landing Boat Launch Improvements Project*. July 18, 2017.

[16] *Ibid.*

Considering the above discussion, the proposed project would not result in adverse effects to Great Valley mixed riparian forest. However, the project would result in the loss of 0.05 acre of wetland habitat. Therefore, the proposed project would result in a ***potentially significant*** impact to sensitive natural communities including wetlands.

Conflicts with Local Policies Or Ordinances

Construction of the proposed project would result in minimal disturbance to natural and naturalized habitats at the project site. Therefore, the proposed project would meet the goals and policies of Yolo County's General Plan through the preservation and protection of natural resources at the site. Additionally, the proposed project would allow for further supervision of the project site, through installation of security cameras and placement of permanent utilities for a camp host, that would minimize damage to vegetation and wildlife habitat, in compliance with Yolo County's General Plan. Lastly, the improvements to the aging infrastructure, landscaping and eroding slough banks would foster and maintain the scenic atmosphere of the river corridor. As such, the proposed project would be consistent with all applicable policies and ordinances related to biological resources, and implementation of the proposed project would result in a ***less-than-significant*** impact.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above impacts to a *less-than-significant* level; thus, with implementation of the following mitigation measures, no impacts would occur as a result of the proposed project.

Mitigation Measure 1 — *A Section 404 Permit and a Water Quality Certification from the Regional Water Quality Control Board, under Section 401 of the Clean Water Act, must be obtained prior to issuance of any grading permits. The County shall acquire a Section 404 permit for fill of jurisdictional wetlands, and mitigation for impacts to jurisdictional waters that cannot be avoided shall be provided in conformance with the USACE "no-net-loss" policy. Potential portions for mitigating the loss of wetland habitat include restoration of on-site wetland habitat, restoration of off-site wetland habitat, or the purchase of mitigation credits. The mitigation for the proposed project shall conform with guidance from the USACE.*

Special Status Species

Existing Setting

A sizable number of native plants and animals have been formally designated as threatened or endangered under state and federal endangered species legislation. Others have been designated as "candidates" for such listing. Still others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has developed a proprietary set of

lists of native plants considered rare, threatened or endangered. Collectively, the plants and animals meeting the above descriptions are referred to as "special status species".[17]

Permits may be required from both the CDFW and United States Fish and Wildlife Service (USFWS) if activities associated with a proposed project will result in the "take" of a listed species. "Take" is defined by the state of California as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86). "Take" is more broadly defined by the federal Endangered Species Act to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). State and federal laws also protect most birds. The Federal Migratory Bird Treaty Act (MBTA) (16 U.S.C., scc. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. The MBTA encompasses whole birds, parts of birds, and bird nests and eggs. Birds of prey are also protected in California under provisions of the State Fish and Game Code, Section 3503.5, which states that it is "unlawful to take, possess, or destroy any birds in the order *Falconiformes* or *Strigiformes* (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFW. In California, protection is afforded to the nests and eggs of all birds. California Fish and Game Code (Section 3503) states that it is "unlawful to take, possess, or needlessly destroy the nest or eggs of any bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Breeding-season disturbance that causes nest abandonment and/or loss of reproductive effort is considered a form of "take" by the CDFW.[18]

The *Biological Evaluation* prepared for the proposed project by Live Oak Associates includes a detailed list of the special status species that are known to exist in the project area, and the likelihood that such species would be present on the project site.[19] Special status species, determined by Live Oak Associates as having the potential to occur at the project site are discussed in further depth below.

Standards of Significance

Would the Project:

- 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 CDFW or USFWS;
- Substantially diminish habitat for any fish life stage or results in displacement of spawning fish such that year-class strength is substantially reduced; or
- Substantially reduce the number or restricts the range of an endangered, rare, or threatened species?

[17] Live Oak Associates, Inc. *Biotic Evaluation Knights Landing Boat Launch Improvements Project*. July 18, 2017.

[18] *Ibid.*

[19] *Ibid.*

Effects

The *Biological Evaluation* of the project site concluded that 26 special status species would have the potential to occur at the project site. Construction of the proposed project would result in disturbance to areas of the project site, which could result in the disturbance of any special status species present at the time of construction.[20] The likelihood for the proposed project to disturb any of the 26 special status species with a potential to occur on site is discussed in further detail in the following sections.

Giant Garter Snake

Most areas of the project site are already developed in ways that would make the site unsuitable for giant garter snakes. Renovation and improvement activity included in the proposed project would be mostly restricted to areas of the project site that are currently unsuitable for giant garter snakes, and permanent effects on habitat for giant garter snakes is unlikely to occur with implementation of the proposed project. Thus, following implementation of the proposed project, the area of the project site suitable for habitat for giant garter snakes would be unchanged from current conditions.[21]

However, giant garter snakes are known to occur in the general project vicinity, especially in rice fields to the north and northwest, and one or more individuals may enter the site during project construction. Individual snakes entering the project site during construction would then be vulnerable to mortality should they seek cover in or under parked equipment, or move through the site at the time trucks and other heavy equipment are being used for project construction.[22] Project-related mortality of giant garter snakes is therefore considered a ***potentially significant*** adverse environmental impact of the project on special status species.

Northern Western Pond Turtle

Similar to the giant garter snake, work areas of the project site provide little habitat to the northern western pond turtle, which is a California species of special concern. Most of the project work related to implementation of the proposed project would occur in areas of the site that are already developed, and represent unsuitable habitat for the species.

However, northern western pond turtles are known to occur in the general project vicinity, particularly along the banks of the Sacramento River and its tributaries, and one or more individuals may enter the site during project construction. Individual turtles entering the site during construction would then be vulnerable to mortality should the individuals seek cover in or under parked equipment, or move through the site at the time trucks and other heavy equipment

[20] Live Oak Associates, Inc. *Biotic Evaluation Knights Landing Boat Launch Improvements Project*. July 18, 2017.
[21] *Ibid.*
[22] *Ibid.*

are being used for project construction.[23] Project-related mortality of northern western pond turtles is therefore considered a ***potentially significant*** adverse environmental impact of the project on special status species.

Chinook Salmon, Steelhead Juveniles, White Sturgeon, and Green Sturgeon

Any construction work in the aquatic habitat of Sycamore Slough would have the potential to result in resuspension of silt and other sediment in the water column. Resuspension of silt and other sediment would degrade water quality and adversely affect fish that may be present, including the federally listed Chinook salmon and Central Valley steelhead. However, it should be noted that the proposed project would include installation of a silt curtain and/or turbidity barrier prior to initiation of in- water work. The silt curtain and/or turbidity barrier would be maintained surrounding the in-water work area through the duration of in-water work related to the proposed project. Installation and maintenance of a silt curtain/turbidity curtain would contain any resuspended silt within the project area, which would prevent the resuspended silt from degrading water quality. The resuspended silt would be allowed to settle prior to removal of the silt curtain and/or turbidity curtain; therefore, the proposed project is unlikely to result in the degradation of water quality due to the resuspension of silt or other sediments during in-water work. Adverse impacts to salmon and steelhead may result from the use of any chemicals in the construction process, or the curing of concrete, should it come in contact with the aquatic environment.[24] Nevertheless, project-related mortality of salmon, steelhead, green sturgeon or white sturgeon is considered a ***potentially significant*** adverse environmental impact of the project on special status species.

Nesting Raptors and MBTA Species

The project site provides nesting habitat for numerous bird species including but not limited to the Ash-throated flycatcher, California scrub jay, oak titmouse, Bullock's oriole, red-shouldered hawk, and red-tailed hawk. The aforementioned species and other MBTA nesting bird species could be injured or killed by project activities should such activities require the removal of one or more trees (i.e., two London plan trees and one blue oak) during the nesting season (approx. February 1 through August 31). In addition to direct "take" of nesting birds, construction-related activities could disturb birds nesting within the mixed riparian forest adjacent to work areas such that the nesting birds may abandon their nests. Construction activities that adversely affect the nesting success of raptors and migratory birds or result in the mortality of individual birds constitute a violation of the California Fish and Game Code and the federal MBTA.[25] Therefore, construction of the proposed project could disturb nesting raptors or MBTA protected species, resulting in a ***potentially significant*** impact related to adverse environmental impacts of the project on special status species.

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[23] Live Oak Associates, Inc. *Biotic Evaluation Knights Landing Boat Launch Improvements Project*. July 18, 2017.

[24] *Ibid.*

[25] *Ibid.*

Special Status Plant Species

Areas of the project site that may previously have provided habitat for special status plant species have been replaced with paved parking areas. Additionally, the project site is outside of the range for several of the special status plant species that occur in the lower Sacramento Valley. Considering the current state of the project site and location of the site outside of the range for several Sacramento Valley special status plant species, special status plant species are unlikely to occur at the project site. Notwithstanding the low likelihood of occurrence, Live Oak Associates performed field surveys of the project site on May 4th and May 30th of 2017. The field visits included on foot surveys of all habitats present at the project site, but did not result in the identification of any special status plant species. [26] Therefore, special status plant species are not known to exist on the project site, and the proposed project would result in a ***less-than-significant*** impact related to adverse environmental impacts on special status plant species.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above impacts to a *less-than-significant* level; thus, with implementation of the following mitigation measures, no impacts would occur as a result of the proposed project.

Mitigation Measure 2(a) *A USFWS-approved biologist shall conduct a pre-construction survey of the project site (including the mixed riparian forest lying within the larger project site, but outside of proposed work areas) for giant garter snakes and northern western pond turtles within 15 days prior to the onset of construction. The information collected from this pre-construction survey shall serve primarily to alert the biologist and construction crews of the general level of giant garter snake and northern western pond turtles activity at the site. Following the pre-construction survey and prior to initiating any in-water work, an exclusion fence shall be installed along both sides of the boat launch access. The fence shall be constructed with non-climb material (e.g., silt fence) to provide an additional barrier to detour wildlife from entering the work area. A qualified biologist shall supervise placement and installation of the exclusion fence. The exclusion area shall be flagged as a Sensitive Resource Area. Construction personnel shall be directed to avoid entering the exclusion area, except as needed to construct the project. A qualified biologist shall prepare plans for the exclusion fencing, and such plans shall be submitted for approval to the Yolo County General Services Department prior to initiation of any in-water work.*

[26] Live Oak Associates, Inc. *Biotic Evaluation Knights Landing Boat Launch Improvements Project*. July 18, 2017.

Mitigation Measure 2(b) *If in-water construction occurs anytime between September 9th and October 1st, a USFWS-approved biological monitor shall be on-site to conduct pre-construction surveys of the project site each morning, preceding the initiation of site work. Any wildlife, including giant garter snakes and northern western pond turtles, observed in the project area shall be allowed to relocate prior to the initiation or re-commencement of construction.*

Mitigation Measure 2(c) *Prior to issuance of a grading permit for the project, the General Services Department of Yolo County shall inspect grading and other relevant improvement plans to ensure that the area of vegetation clearing has been limited to the extent feasible. In particular, clearing of vegetation shall be limited to those areas necessary to facilitate construction activity.*

Chinook Salmon, Steelhead Juveniles, White Sturgeon, and Green Sturgeon

Mitigation Measure 3 *Should project construction commence at a time of year when juvenile salmon, steelhead smolts, or juvenile sturgeon could be present in Sycamore Slough (i.e., between February 1st and September 1st), the County shall develop, in consultation with the National Marine Fisheries Service (NMFS) and the CDFW, a Water Quality Protection Plan, the provisions of which would be in effect whenever work must occur within the aquatic environment. Such a plan may employ the use of a turbidity curtain or some other type of sediment barrier that would confine suspended sediment to the immediate vicinity of the project-related work. Such a plan must be approved by NMFS and the CDFW prior to initiating work on the project.*

Mitigation Measure 4 *A certified biologist shall be present to monitor all in-water work related to the proposed project. The biologist shall ensure compliance with the project-specific Water Quality Protection Plan through on-going monitoring during in-water work. If the monitoring biologist determines that in-water work is being conducted in violation of the Water Quality Protection Plan, in-water work shall cease until such time as the certified biologist and the General Services Department of Yolo County have addressed and rectified the identified issues to the satisfaction of the NMFS and the CDFW.*

MBTA Covered Species and Nesting Raptors

Mitigation Measure 5(a) *If project construction activities must occur during the nesting season (i.e., February 1 through August 31), a qualified biologist shall conduct preconstruction surveys for active raptor and migratory bird nests within 30 days prior to the onset of construction activities. The survey shall include the proposed work area(s) and surrounding lands within 500 feet for all nesting raptors and migratory birds. If nesting pairs are not found within the survey area, further mitigation would not be required. Results of the survey shall be submitted to the General Services Department of Yolo County for review and approval.*

Mitigation Measure 5(b) *Should any active nests be discovered near proposed work areas, a qualified biologist shall determine appropriate construction setback distances based on applicable CDFW guidelines and/or the biology of the affected species. Construction-free buffers shall be identified on the ground with flagging, fencing, or by other easily visible means, and shall be maintained until the biologist has determined that the young have fledged.*

Cultural Resources

Existing Setting

The area of potential effect (APE) is approximately four acres and consists mostly of gently sloping terrain. A portion of the Sycamore Slough is included in the APE. The Sacramento River is approximately 40 meters east of the APE. Levees surround the APE except the portion of the APE within the slough. Project plans do not include alterations to any portion of the levees.[27]

The geology of the APE is Holocene alluvium and fan deposits, which date to the current geologic epoch and encompasses the period for human occupation in America. Archaeological evidence indicates that human occupation of California began at least 11,000 years ago Early occupants appear to have had an economy based largely on hunting, with limited exchange, and social structures based on extended family units. Later, milling technology and an inferred acorn economy were introduced. This diversification of economy appears coeval with the development of sedentism, population growth, and expansion. Sociopolitical complexity and status distinctions based on wealth are also observable in the archaeological record, as evidenced by an increased range and distribution of trade goods (e.g., shell beads, obsidian tool stone), which are possible indicators of both status and increasingly complex exchange systems.[28]

[27] Tom Origer & Associates. *A Cultural Resources Study for the Knights Landing Boat Launch Project*. June 16, 2017.

[28] *Ibid.*

At the time of European settlement, the APE was situated within the area controlled by the Wintun, also known as Patwin. The Wintun were hunter-gatherers who lived in rich environments that allowed for dense populations with complex social structures. They settled in large, permanent villages about which were distributed seasonal camps and task-specific sites. Primary village sites were occupied throughout the year and other sites were visited in order to procure particular resources that were especially abundant or available only during certain seasons. Sites often were situated near fresh water sources and in ecotones where plant life and animal life were diverse and abundant.[29]

Historically, the study area is within the Rancho Jimeno granted to Manuel Jimeno Casarín in 1844. When the Rancho was granted, the Rancho Jimeno consisted of five leagues of land, of which 48,854 acres were claimed by Thomas O. Larkin and John S. Misroon in 1862.[30]

Standards of Significance

A project would be considered to have a significant adverse effect on cultural resources if it diminishes the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association. Types of effects include physical destruction, damage, or alteration; isolation or alteration of the character of the setting; introduction of elements that are out of character; neglect; and transfer, lease, or sale. Furthermore, the project would have a substantial environmental effect if the project would:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5;
- Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource on site or unique geologic features;
- Disturb any human remains, including those interred outside of formal cemeteries;
- 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:
    - 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
    - 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.

[29] Tom Origer & Associates. *A Cultural Resources Study for the Knights Landing Boat Launch Project*. June 16, 2017.

[30] *Ibid.*

Effects

California's Native American Heritage Commission (NAHC) identified sacred lands within the search area, and provided a list of Native American individuals and groups that should be contacted regarding the project. In addition to the groups identified by the NAHC, the County notified tribes under Assembly Bill (AB) 52 and initiated consultation with the United Auburn Indian Community of the Auburn Rancheria. In compliance with AB 52, consultation is actively occurring for the proposed project. It should be noted that USACE will conduct tribal consultation pursuant to Section 106 as a separate process associated with USACE permitting.

Archival research was conducted for the proposed project, which included files from Tom Origer & Associates, the National Register of Historic Places, California Historical Landmarks, California Register of Historical Resources, California Points of Historical Interest, review of historical maps of the area, and a records search at the Northwest Information Center. The result of the archival research was the identification as one potential resource recorded within the APE. The potential resource consists of the remnants of a wooden railroad trestle that previously spanned Sycamore Slough. Historical maps do not show any other structures in the APE, and the railroad trestle was most likely constructed between 1869 and 1939.[31]

In addition to Native American consultation and archival records search, Tom Origer & Associates conducted a field survey of the APE on May 19, 2017. The field survey did not identify any historic, cultural, tribal, or archaeological resources. However, full assessment of the APE was hindered because approximately 75 percent of the project area is obscured by asphalt.[32]

Historical Resources

The nearest potential historic resource to the project site are railroad trestles, which were identified and analyzed by Tom Origer & Associates. As discussed in the Cultural Resources Study prepared for the project, the railroad trestle is not considered eligible for listing in the National Register of Historic Places or the California Register of Historical Resources.[33] Nonetheless, the proposed project does not currently include alterations to the railroad trestle. Because other historic resources or potential historic resources do not exist at the project site, and the railroad trestles would not be altered during implementation of the proposed project, the proposed project is not anticipated to result in any significant degradation of existing historical resources.

It should be noted that USACE will consult with the State Historic Preservation Officer as a separate process associated with USACE permitting.

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[31] Tom Origer & Associates. *A Cultural Resources Study for the Knights Landing Boat Launch Project*. June 16, 2017.

[32] *Ibid.*

[33] *Ibid.*

Because the proposed project would not alter the existing railroad trestle, and other historic resources do not exist at the project site, the proposed project would not result in a substantial adverse change to a historic resource, and implementation of the proposed project would result in a ***less-than-significant*** impact.

Cultural, Archaeological and Tribal Cultural Resources

Although cultural and tribal cultural resources are not known to occur on the project site, the field survey of the project site was hindered by the presence of asphalt over the majority of the project site. The proposed project would result in the repaving of the majority of the site; however, most of the existing pavement would be retained and overlain with new paving material. In addition to repaving, the proposed project includes expansion of the existing boat ramp, re-landscaping of portions of the project site, and removal of some of the existing pavement. Expansion of the existing launch ramp, landscaping, and the limited pavement removal activity would have the potential to disturb areas of the project site that were not previously disturbed by development of the existing facility. Additionally, expansion activity may expose ground surfaces that were not inspected during the field survey portion of the Cultural Resources Study, and, thus, expose previously unknown cultural, archaeological or tribal cultural resources. Considering the geologic and soil material present at the project site, the Cultural Resources Study concluded that the probability of identifying a buried cultural, archaeological, or tribal cultural feature was between five and 20 percent.[34] Therefore, the proposed project could result in the disturbance of previously unknown cultural, archaeological, or tribal cultural resources. As such, the Proposed Project could result in a ***potentially significant*** impact related to creation of a substantial adverse change to a cultural, archaeological, or tribal cultural resources.

Disturbance of Human Remains

Human remains are not known to occur on the project site, and the Cultural Resources Study did not identify any human remains during field study of the project site.[35] However, as discussed above, implementation of the proposed project would result in some ground disturbance. Although unlikely, such ground disturbance could have the potential to disturb previously unknown human remains. Thus, the proposed project would result in a ***potentially significant*** impact related to the disturbance of human remains.

Paleontological Sources

As noted in the Cultural Resources Study, the geology of the project site is of Holocene age, and is characterized as alluvium and fan deposits. The Holocene epoch encompasses the span of time from approximately 11,700 years ago to the present, and is contemporaneous with human arrival

[34] Tom Origer & Associates. *A Cultural Resources Study for the Knights Landing Boat Launch Project*. June 16, 2017.
[35] *Ibid.*

and occupation of California.[36] Holocene alluvial deposits are not typically considered fossiliferous, due to the young geologic age of the deposits. However, because the proposed project would involve some ground disturbing activity, if fossils or paleontological resources exist on site, the proposed project would have the potential to disturb such resources. Consequently, the proposed project would result in a ***potentially significant*** impact related to the disturbance of paleontological resources.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above impacts to a *less-than-significant* level.

Mitigation Measure 6. *If any prehistoric artifacts or other indications of archaeological resources (such as chipped chert and obsidian tools and tool manufacture waste flakes; grinding and hammering implements; bones; ceramic; glass; metal; at some sites locally darkened soils that generally contain abundant archaeological specimens; structure foundations; or pits) are found during grading and construction activities, all work within 100 feet of the find shall cease and the General Services Department of Yolo County shall retain a qualified archaeologist to evaluate the find(s). If the resource is determined to be eligible for inclusion in the California Register of Historical Resources and project impacts cannot be avoided, data recovery shall be undertaken. Pursuant to CEQA Guidelines Section 15126.4(b)(3)(C), a data recovery plan, which makes provisions for adequately recovering the scientifically consequential information from and about the resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Archeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code. If an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation. The language of this mitigation measure shall be included on any future grading plans approved by the County for the proposed project site.*

Mitigation Measure 7. *In the event of the discovery or recognition of any human remains, further excavation or disturbance of the find or any area within 100 feet of the find that is reasonably suspected to overlie adjacent human remains shall not occur until compliance with the provisions of CEQA Guidelines Section 15064.5(e)(1) and (2) has occurred. The Guidelines specify that in the event of the discovery*

[36] Tom Origer & Associates. *A Cultural Resources Study for the Knights Landing Boat Launch Project*. June 16, 2017.

of human remains other than in a dedicated cemetery, no further excavation at the site or any nearby area suspected to contain human remains shall occur until the County Coroner has been notified to determine if an investigation into the cause of death is required. If the coroner determines that the remains are Native American, then, within 24 hours, the Coroner must notify the Native American Heritage Commission, which in turn will notify the most likely descendants who may recommend treatment of the remains and any grave goods. If the Native American Heritage Commission is unable to identify a most likely descendant or most likely descendant fails to make a recommendation within 24 hours after notification by the Native American Heritage Commission, or the County rejects the recommendation by the most likely descendant and mediation by the Native American Heritage Commission fails to provide a measure acceptable to the County, then the County shall rebury the human remains and grave goods with appropriate dignity at a location on the property not subject to further disturbances. Should human remains be encountered, a copy of the resulting County Coroner report noting any written consultation with the Native American Heritage Commission shall be submitted as proof of compliance to the Yolo County Department of General Services.

Mitigation Measure 8. *The General Services Department of Yolo County shall submit grading details to tribes who have requested consultation on this project under Public Resources Code Section 21080.3.1. The grading details can be submitted in the form of a grading plan and shall set forth the plan and methodology for grading, including a timeline, grading locations, and other pertinent details including but not limited to the types of equipment to be used. At least 10 business days prior to project grading, the County shall contact the tribe(s), who have requested consultation, to notify the tribe(s) of grading. Tribe(s) shall be allowed access to the site for monitoring purposes during ground disturbing activities only, if they so desire.*

For any resources identified as meeting the definition of tribal cultural resources set forth in Public Resources Code Section 21074, significance determinations shall be measured in terms of criteria for inclusion on the California Register of Historical Resources (Title 14 CCR, §4852[a]). The evaluation of the tribal cultural resource(s) shall include culturally appropriate temporary and permanent treatment, which may include avoidance of tribal cultural resources, in-place preservation, and/or re-burial on

project property so the resource(s) are not subject to further disturbance in perpetuity. Any reburial shall occur at a location predetermined between the County and tribe.

The County shall relinquish ownership of all sacred items, burial goods, and all archaeological artifacts that are found on the project area to the tribe for proper treatment and disposition.

Geology and Soils

Existing Setting

Compared to other areas of California, Yolo County has a relatively low probability of experiencing earthquake hazards. However, the County does contain two known faults, one of which is considered active, and could be subject to seismic activity originated within the County or from nearby. Therefore, a risk of damage from seismic events exists within the County.[37] Local soil conditions, such as soil strength, thickness, density, water content, and firmness of underlying bedrock affect seismic response.

Hazards related to seismic activity include landslides, soil liquefaction and mudslides. According to the 2030 Countywide General Plan, Knights Landing is an area of low susceptibility to landslides and mudslides.[38] Liquefaction is a phenomenon in which saturated cohesionless soils are subject to a temporary loss of shear strength due to pore pressure buildup under the cyclic shear stresses associated with intense earthquakes. Primary factors that trigger liquefaction are: moderate to strong ground shaking (seismic source), relatively clean, loose granular soils (primarily poorly graded sands and silty sands), and saturated soil conditions (shallow groundwater).

Areas of Knights Landing have experienced geologic hazards related to land subsidence, primarily due to groundwater withdrawal. Land subsidence involves changes in ground level elevation, which in some portions of the County have fluctuated by as much as four feet. Subsidence can lead to damage to highways, levees, and other infrastructure.[39]

Much of the project site is overlain with impervious paved surfaces related to parking, drive aisles, and the boat launch area. The existing pavement holds soil in place and prevents erosion over much of the site. However, erosion does occur along the Ordinary High-Water Mark (OHM) due to boat wake action within the slough.

Soils at the project site consist of sandy loam soils, which have a low shrink swell-potential. Therefore, the soils underlying the project site are not considered expansive.

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37 County of Yolo. *2030 Countywide General Plan* [pg. HS-5]. November 10, 2009.
38 County of Yolo. *2030 Countywide General Plan* [pg. HS-9]. November 10, 2009.
39 County of Yolo. *2030 Countywide General Plan* [pg. HS-8]. November 10, 2009.

Standards of Significance:
Would the Project:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
    - 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 based on other substantial evidence of a known fault;
    - Strong seismic ground shaking;
    - Seismic-related ground failure, including liquefaction;
    - Landslides;
- Result in substantial soil erosion or the loss of topsoil;
- 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;
- Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code; or
- 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?

Effects

The proposed project would involve the renovation of existing facilities, the expansion of the existing boat launch ramp, and construction of a new permanent 350-sf bathroom facility.

Exposure of People or Structures to Seismic Risk

The project site can be expected to experience moderate to strong ground shaking during future seismic events along major active faults throughout Northern California or on smaller active faults located in the project vicinity. However, the project would comply with all applicable Uniform Building Code (UBC) requirements, and a Building Permit would be obtained from the Yolo County Community Services Department. Compliance with applicable UBC requirements would be ensured during the Building Permit process. Any major earthquake damage affecting the project site is likely to occur from ground shaking and seismically related ground and structural failures. Seismically induced shaking and some damage would be expected to occur during an event but damage is not anticipated to be more severe at the project site than elsewhere in the region. The proposed restroom is expected to be constructed of filled concrete masonry units constructed on top of a structurally reinforced stem wall in accordance with UBC requirements, and would be generally flexible enough to sustain only minor structural damage from ground shaking. The proposed camp host residence would be a recreational vehicle, which would not be affected by ground shaking. Therefore, people and structures would not be exposed to substantial adverse effects involving strong seismic ground shaking. As such, the proposed project would result in a ***less-than-significant*** impact related to the exposure of structures or people to substantial seismic risk.

Expansive Soils

As discussed in the existing setting section above, the proposed project site is not anticipated to experience significant amounts of soil expansion. Thus, the proposed improvements and renovations are not anticipated to experience long-term-differential settlement and cracking of foundations, disruption and cracking of paved surfaces, and/or underground utilities due to the shrinking and swelling of soil. As a result, the proposed project would result in a ***less-than-significant*** impact related to expansive soils.

Soil Erosion and Soil Loss

Implementation of the proposed project would involve limited amounts of ground disturbance, which could expose topsoil to erosive forces such as wind and water. Eroded topsoil could be transported to surface water. Yolo County regulations require that projects involving the disturbance of over an acre of land require permitting under the State's National Pollution Discharge Elimination System (NPDES) construction general permit. As such, a NPDES construction general permit from the Regional Water Board would be required to be obtained for the proposed project. Under the NPDES permitting program, the preparation and implementation of storm water pollution prevention plans (SWPPPs) are required for construction activities that disturb more than one-acre in area. The plan would require the use of soil erosion control techniques consistent with Yolo County's Storm Water Management Plan,[40] which in turn would reduce the possibility of any significant soil erosion from occurring.

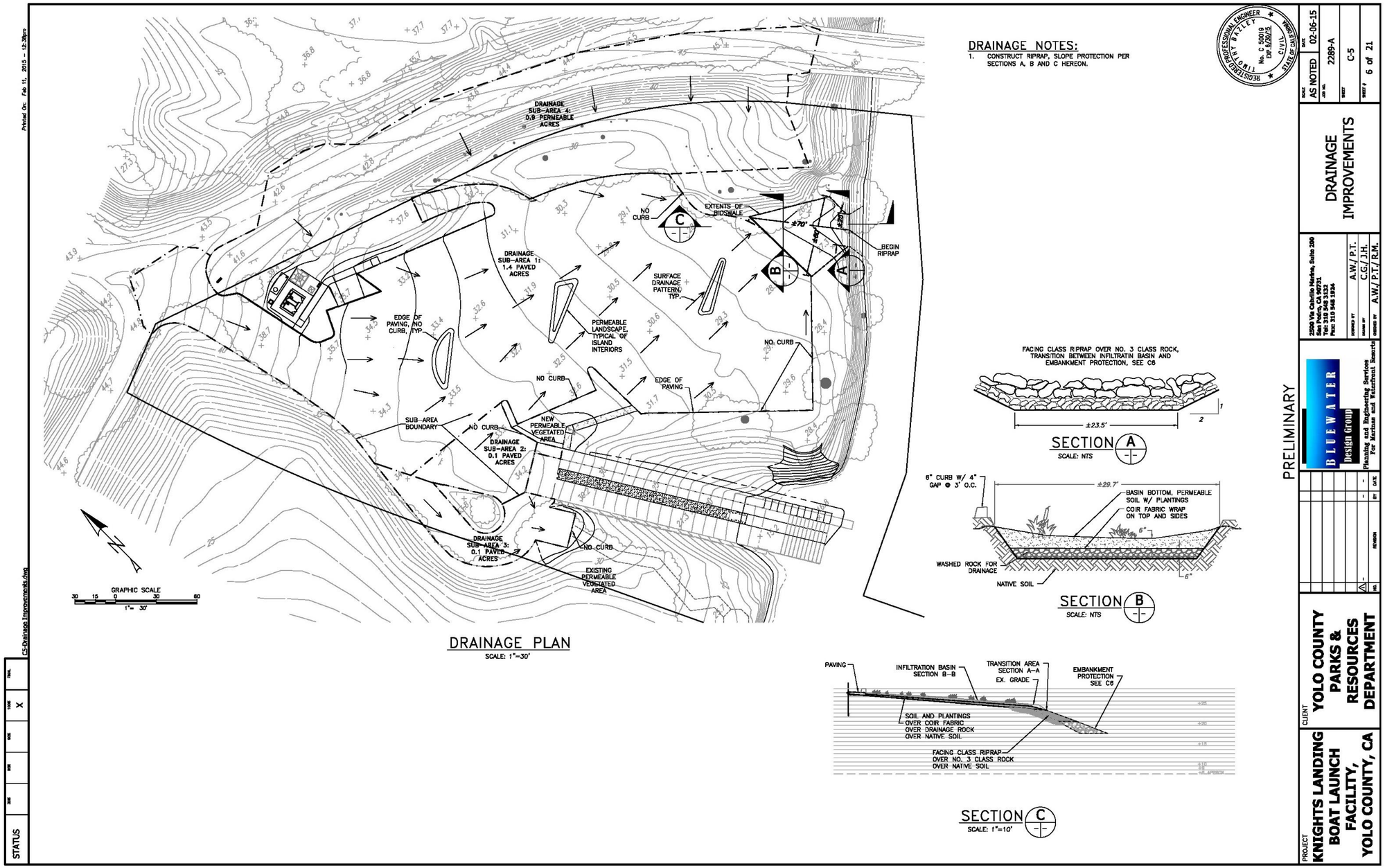
Existing operations at the Knights Landing Boat Launch Facility have led to erosion along the banks on the Sycamore Slough. The proposed project would incorporate bank stabilization efforts to reduce erosion related to operations of the Boat Launch. Bank stabilization would be achieved through the placement of rip-rap along the OHWM at the property frontage along Sycamore Slough. The rip-rap would dissipate boat wake energy prior to the wake hitting the existing bank, and, thus, reduce erosion of the bank. Furthermore, the proposed project would include re-planting of the property frontage along Sycamore Slough with native plants. The native plants are intended to further reduce erosion through re-vegetation of the slope.

Drainage for the parking area would be improved through the construction of an infiltration basin along the northeastern corner of the project site. As shown in Figure 5, below, runoff from the renovated parking area would be directed to the infiltration basin. The infiltration basin would slow the stormwater runoff, and would be designed to resist erosion through the use of rip-rap and vegetation plantings. Construction of the infiltration basin would reduce the potential for erosion to occur due to stormwater runoff from the renovated parking area.

Implementation of an SWPPP, the related soil control techniques, placement of rip-rap, revegetation, and construction of a infiltration basin would ensure that the proposed project does not result in increased soil loss or erosion, and a ***less-than-significant*** impact would occur.

[40] Yolo County. *Storm Water Management*. Available at http://www.yolocounty.org/community-services/planning-public-works/public-works-division/storm-water-management. Accessed June 2017.

Figure 5
Drainage Improvements



Unstable Soils or Geologic Units

The project site is relatively level and the proposed project is not anticipated to result in the exposure of people or structures to potential landslides. The underlying soils at the project site have not experienced significant liquefaction or subsidence in the previous 40 years of operation of the existing Knights Landing Boat Launch Facility. The proposed project would involve renovation of the existing uses and improvement of the Boat Launch Facility. However, the improvements would be limited to expanding the boat launch ramp, improving the existing camp host site, and constructing a small new 350-sf bathroom facility. Therefore, the proposed project would not introduce new people or substantial new structures to an area subject to unstable soils or geologic units. As such, the proposed project would result in a ***less-than-significant*** impact.

Septic Systems

The proposed project would not include septic tanks due to the annual flooding that occurs on the site as a result of high water from the Sacramento River. A vault storage system is proposed for the permanent restroom to handle waste from the site. Construction of the on-site vault storage tanks would require approval by the Yolo County Environmental Health Division. Because the proposed project would not include septic tanks, ***no impact*** related to the operation of septic tanks would occur.

Hazardous, Toxic, and Radiological Waste and Materials

Existing Setting

The proposed project site currently operates as the Knights Landing Boat Launch Facility. Operation as a recreational boat launch facility does not involve the use, transport, or disposal of significant amounts of hazardous materials. However, small amounts of oils and fuels for boats are used on the project site. Nevertheless, the amount of oil and fuel in each boat is small, and such materials would not be considered to constitute a significant threat.

The nearest private airport to the project site is the Bob's Flying Service Inc. Airport, located approximately 1.8 miles to the northeast, in Sutter County. Public airfields are not located in proximity to the project site. The Science and Technology Academy at Knights Landing is the closest school to the project site, and is approximately 0.2 mile away.

The project site is not included on a list of hazardous materials sites compiled by the Yolo County Environmental Health Division-Hazardous Waste Site Files pursuant to Government Code 65962.5. Furthermore, the project site is not located on a hazardous materials site as identified by the California Department of Toxic Substances Control.[41]

[41] California Department of Toxic Substances Control. *EnviroStor*. Accessible at http://www.envirostor.dtsc.ca.gov/public/. Accessed June 2017.

Standards of Significance:
Would the Project:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- 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;
- 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 for people residing or working in the project area;
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Effects

Hazardous Materials

Construction of the proposed project would involve the use of flammable oils and fuels. However, the use of such materials during construction is routine and is not considered to pose a significant hazard. Operations of the boat launch facility would not be changed by the renovations and expansion. Therefore, despite the use of some oils and fuels during project construction and operation, the limited amounts of hazardous materials that would be used would not represent a significant hazard to the public or to the Science and Technology Academy at Knights Landing, and a ***less-than-significant*** impact would result.

Hazardous Materials Site

The project site is not included on a list of hazardous materials sites compiled by the Yolo County Environmental Health Division-Hazardous Waste Site Files pursuant to Government Code 65962.5. Furthermore, the project site is not located on a hazardous materials site as

identified by the California Department of Toxic Substances Control.[42] As a result, the proposed project would result in ***no impact***.

Airport Hazards

The project is not within ten miles of a public airport, and is not within the runway clearance zones established to protect the adjoining land uses in the vicinity from noise and safety hazards associated with aviation accidents. The proposed project does not include any changes to project operations that could pose hazards to the operation of nearby airstrips, and, thus, the proposed project would result in ***no impact*** related to public and private airports.

Wildland Fire Risk

The project site is bordered by Sycamore Slough to the South, and the Sacramento River is in close proximity to the east. Although dense vegetation exists to the west of the site, the vegetation is riparian in nature and would not be considered particularly vulnerable to wildland fires. The agricultural land to the north and east of the site is irrigated, but could be considered vulnerable to wildland fires. The proposed project would continue use of the project site as a boat launch ramp. The only structure that would be added to the project site would be a 350-sf concrete masonry structure that would not be susceptible to significant fire damage. Furthermore, the camp host would not permanently reside on the project site, and would stay in a recreational vehicle when on-site. The recreational vehicle would not be particularly susceptible to wildfire, as the vehicle could be moved in case of fire. As such, the proposed project is anticipated to result in a ***less-than-significant*** impact related to the exposure of people or structures to a significant risk of loss, injury or death involving wildland fires.

Noise

Existing Setting

The noise environment of the proposed project site consists of noise from operation of the existing Knights Landing Boat Launch Facility, vehicle traffic along SR 45, and noise from the Sacramento River and Sycamore Slough, including noise from the Sycamore Slough Dam. Furthermore, periodic noise from nearby agricultural activities may be heard from the project site. The nearest sensitive receptor to the project site is approximately 300 feet away, across Sycamore Slough.

Standards of Significance

Would the Project result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

[42] California Department of Toxic Substances Control. *EnviroStor*. Accessible at http://www.envirostor.dtsc.ca.gov/public/. Accessed June 2017.

- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels in excess of 0.5 inches per second peak particle velocity (in/sec PPV);
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- 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 expose people residing or working in the project area to excessive noise levels; or
- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Effects

The proposed project would not increase operational noise or groundborne vibrations from the project site. However, construction noise would temporarily involve the use of heavy machinery and earth moving equipment, which could cause noise or groundborne vibrations in the project area.

Excessive Noise

The proposed project would involve operation of the Knights Landing Boat Launch Facility following construction of renovations and improvements. Operations following such improvements are not anticipated to change significantly, and the current boat launch operations are not known to cause excessive noise. Because operation of the proposed project would involve similar sources of noise as currently occurs at the project site, the proposed project is not anticipated to result in the creation of excessive operational noise or a change in ambient noise in the project area.

Construction activity would generate noise during the renovation and improvement of the existing Boat Launch Facility. However, construction activity would occur over a relatively short amount of time, approximately six months, and would be anticipated to occur during normal daytime hours. Furthermore, the project site is separated from the nearest sensitive receptor by the Sycamore Slough, a levee, and relatively dense vegetation. Noise intensity reduces with distance, thus, the distance between the project site and the nearest residence would attenuate some of the construction related noise prior to reaching the residence. Typically, a three-decibel reduction in sound intensity occurs with every doubling of distance from a source. Based on the Federal Highway Administration's Construction Noise Handbook, activities involved in typical construction would generate maximum noise levels up to 88 decibel (dB) at a distance of 50 feet.[43] The nearest residence is approximately 300 feet away from the project site. Therefore, the construction noise would be reduced to approximately 73 dB at the nearest residence. Additionally, the intervening levee and vegetation would also work to block noise from reaching

[43] United States Environmental Protection Agency. *Legal Compilation on Noise* [Volume 1, pgs 2-104]. 1973

the residence. As such, construction of the proposed project would be unlikely to subject nearby residents to excessive noise, and the temporary and intermittent nature of construction activity would not permanently alter ambient noise levels in the project area. Therefore, proposed project would result in a ***less-than-significant*** impact related to the exposure of persons to excessive noise and changes to ambient noise in the project area.

Groundborne Vibration

Heavy-duty construction equipment may be used in the construction of the proposed project (e.g., tractors, pavers). Such equipment has the potential to generate groundborne vibrations. Levels of vibration include imperceptible vibrations at low levels, low rumbling and minor vibration at moderate levels, and structural or architectural damage at high levels. For structural damage, the California Department of Transportation (Caltrans) uses a vibration limit of 0.5 in/sec PPV, for buildings structurally sound and designed to modern engineering standards and 0.2 in/sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern.

The nearest structure is the bridge over SR 45, which is approximately 75 feet from the existing boat launch parking area, and the nearest sensitive receptor is a residence 300 feet away from the project site, across Sycamore Slough. Both the bridge and the nearest residence are assumed to be of solid construction; therefore, the 0.5 in/sec PPV is applied as a threshold for the generation of groundborne vibrations related to construction of the proposed project. Table 5, below, presents typical vibration levels that could be expected from construction equipment at a distance of 25 feet.

As shown in Table 5 below, typical construction equipment is anticipated to result in vibrations below the 0.5 in/sec PPV threshold at a distance of 25 feet. Therefore, neither the closest existing sensitive receptor nor the SR 45 bridge over Sycamore Slough would be likely to experience vibrations in excess of the Caltrans standard.

Additionally, boat launch activities do not involve the generation of significant groundborne vibrations. As a result, operation of the expanded boat launch included in the proposed project would not generate significant groundborne vibrations.

Table 5
Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 ft (in/sec)
Vibratory Roller	0.210
Large Bulldozer	0.089
Caisson drilling	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003

Source: Caltrans, Transportation and Construction Vibration: Guidance Manual, September 2013.

Considering the above discussion, the proposed project is not anticipated to generate excessive groundborne vibrations, and, as a result, the proposed project would result in a ***less-than-significant*** impact related to groundborne vibrations.

Airport Related Noise

The nearest public airport is over ten miles away from the project site. Additionally, the project site is not within an airport land use plan for a public or private airport. The nearest private airport is the Bob's Flying Service Inc. Airport, located approximately 1.8 miles to the northeast. The proposed project would not include the construction of any residences on the project site. While the proposed project would involve County maintenance staff and a camp host working at the site, the existing operations of the Knights Landing Boat Launch Facility include such employee operations, and the proposed project would not increase employee exposure to excess noise. Moreover, operations at Bob's Flying Service Inc. are limited to crop dusting activities, and does not involve large or heavy-duty airplane traffic that would generate excessive noise. Therefore, future employees would not be exposed to excessive noise levels due to a private airstrip, and a ***less-than-significant*** impact would occur.

Water Quality and Wetlands

Existing Setting

The proposed project site is located near the confluence of Sycamore Slough and the Sacramento River. Areas of Sycamore Slough and the Sacramento River, below the OHWM are considered federally protected water of the United States as defined by Section 404 of the Clean Water Act.

Because the majority of the project site is covered by impermeable pavement, most of the stormwater falling on the project site runs off to Sycamore Slough. As such, substantial recharge of groundwater does not occur on the project site. Runoff flowing over the pavement of the project site would pick-up pollutants on the pavement such as fuels, oils and other pollutants from vehicles and boats operated in the parking lots. Such pollutants, as well as any litter or loose waste, are then be transported directly to Sycamore Slough.

Standards of Significance

Would the Project:

- Violates applicable water quality standards or otherwise substantially degrades water quality;
- Substantially alters the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in a substantial increase in the availability and mobilization of sediments and associated contaminants;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means; or

- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Effects

The proposed project would include repaving of the project area, and expansion of the boat launch ramp.

Water Quality and Site Drainage

As discussed in the Geology and Soils Section of this document, the proposed project would include changes to the drainage pattern of the project site. Rather than allowing runoff to flow directly to Sycamore Slough, runoff from the parking area would first be directed to an infiltration basin (see Figure 5). Stormwater directed to the infiltration basin would be allowed to pass through active soil layers, which would filter some of the pollutants being carried by the runoff prior to discharge into Sycamore Slough. Furthermore, the proposed project includes the placement of rip-rap along the banks of Sycamore Slough. Rip-rap would dissipate boat wakes, reducing erosion along Sycamore Slough. Reducing erosion and stormwater runoff during operation of the proposed project would reduce the potential for the proposed project to result in the degradation of water quality.

Construction activities related to the proposed project could result in increased erosion and sediment input into Sycamore Slough, as well as increased pollutant discharge from construction machinery. However, as previously discussed in the Geology and Soils Section, a SWPPP must be prepared for construction activities related to the proposed project. The SWPPP would include BMPs that would ensure erosion that construction activity would not result in the degradation of water quality in the project area.

The proposed project would include installation and maintenance of silt curtains and/or turbidity barriers prior to and during all in-water work. Silt curtains and/or turbidity barriers would restrict resuspended silt or sediment from traveling away from the project site. Through the restriction of silt and sediment during in-water work, the proposed project would ensure that construction activity does not result in the degradation of water quality during in-water work.

Considering the above discussion, the proposed project is not anticipated to result in any degradation of water quality due to changes in site drainage or construction activities. Thus, a ***less-than-significant*** impact would result from implementation of the proposed project.

Wetlands

The proposed project would involve the placement of rip-rap as well as the expansion of the existing boat launch ramp within an area considered as a water of the United States. The Sycamore Slough below ordinary high water (i.e., 17 feet above sea level) is a federally protected water of the United States as defined by Section 404 of the Clean Water Act subject to the jurisdiction of the USACE. All work below ordinary high water will permanently affect less than 0.23 acre of such waters.[44] However, the majority of such effects would be limited to the placement rip-rap, which would serve to protect the wetland areas from continued erosion due to boat wake action. While the majority of in-water work would involve the placement of rip-rap, approximately 0.05 acre of wetland area would be used for the expansion of the concrete ramp.

The placement of rip-rap and the installation of a concrete ramp is regulated by the USACE. In compliance with the provisions of Section 404 of the Clean Water Act, the County shall obtain a Department of the Army (DA) permit for the discharge of fill into a water of the United States. The project must also seek and obtain a California Water Quality Certification from the Regional Water Quality Control Board (RWQCB) to be in compliance with Section 401 of the Clean Water Act. Finally, the County would obtain a Streambed Alteration Agreement from the CDFW prior to implementation of the proposed project. The Streambed Alteration Agreement, California Water Quality Certification, and the Section 404 Permit would include conditions involving the avoidance and minimization of impacts, and possible conservation or replacement of habitat on the project site or elsewhere. Compliance with the aforementioned permits, agreements, and certifications would ensure that the proposed project complied with the USACE's "no-net-loss" policy.

Because the Proposed Project would have the potential to result in the loss of 0.05 acre of wetland area, related to the expansion of the concrete boat ramp, the proposed project would result in a ***potentially significant*** impact related to adverse effects on protected wetlands.

Groundwater Recharge

The majority of the project site is currently paved, and substantial groundwater recharge does not occur at the site. The proposed project would include construction of an infiltration basin, which would allow for stormwater to filter through active soil layers and access underlying soil strata. Construction of an infiltration basin on the project site would increase the ability for stormwater to reach and recharge groundwater in the area; however, the anticipated increase would not be considered substantial compared to other sources of groundwater recharge in the area. Nevertheless, the proposed project would not deplete groundwater supplies or inhibit groundwater recharge, and, thus, a ***less-than-significant*** impact related to groundwater resources would occur.

[44] Live Oak Associates, Inc. *Biotic Evaluation Knights Landing Boat Launch Improvements Project*. July 18, 2017.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the above impacts to a *less-than-significant* level; thus, with implementation of the following mitigation measures, no impacts would occur as a result of the proposed project.

Mitigation Measure 9 *Implement Mitigation Measure 1.*

Traffic and Circulation

Existing Setting

The Yolo County Public Works Division of the Community Services Department installed vehicle trip counters at the Knights Landing Boat Launch between April 2015 and December 2015. The vehicle counters were placed at the park on select weekends (Friday through Sunday) during each quarter of 2015.[45] The results of the trip counting are presented in Table 6 below.

Table 6
Knights Landing Boat Launch Vehicle Trips

Average Weekend	Average Weekday	Average Trips per Week	Estimated Trips per Year
75	7	253	13,172

Source: Yolo County Administrator's Office. *Yolo County Sustainable Parks Study* [pgs. 32-33]. June 14, 2016.

Using data from the trip counts, Yolo County concluded that the Knights Landing Boat Launch Facility receives the most visitors on the weekends between March and September. The vehicle access to the project site is provided by SR 45, which is a two-lane road near the project site. Regional access to the project area is provided by SR 113.

Standards of Significance
Would the Project:

- Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the road system;
- Exceed, either individually or cumulatively, a level of service (LOS) standard established by the county congestion management agency for designated roads and highways;
- Result in a change in traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks;
- Result in inadequate parking capacity;
- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;

[45] Yolo County Administrator's Office. *Yolo County Sustainable Parks Study*. June 14, 2016.

- Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- Result in inadequate emergency access;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Effects

The proposed project would include the repaving and restriping of portions of the project site, in addition to expansion of the existing boat launch ramp, construction of a new restroom facility, and other improvements.

Changes in Traffic Patterns

Although the proposed project involves various renovations and improvements to the existing facility, the proposed project is not anticipated to alter the usage patterns of the facility. Thus, the proposed project would not increase the number of vehicles accessing the site. Because the project would not increase the number of vehicles accessing the project site, the proposed project would not result in changes to the LOS of any nearby intersections or roadway segments.

The proposed project would renovate and improve the site in compliance with the County land use and zoning designations for the project site. Any County plans and policies concerning circulation or transportation would include consideration of the zoning, land use designation, and existing land uses for the project site. The proposed project would continue the existing land uses on the project site, and would not alter the traffic patterns in the project area; therefore, the proposed project would be considered consistent with any applicable County Plans and policies concerning transportation for the project area.

As a result, the proposed project would result in a ***less-than-significant*** impact related to increases in traffic, changes in traffic patterns, and the proposed project would not result in the creation of conflicts with existing plans or standards regarding traffic operations in the project area.

Circulation and Site Hazards

The repaving and restriping of the project site would result in improvements to site circulation. Furthermore, the expansion of the boat launch ramp to two-lanes would ease some of the hazards that occur due to vehicle queuing and competition for access to the ramp. The proposed project would not include any changes to site access, or SR 45, which could create significant hazards or

alter the traffic patterns of the project area. Because access to the project site would be maintained, and circulation improved, emergency access to the project site would be unchanged or improved by implementation of the proposed project. Restriping of the parking area would increase the ease of parking on the project site, and the parking layout has been designed to accommodate the anticipated number of users at the facility. In addition, the repaving and restriping of the project site included in the proposed project would increase site circulation and decrease potential hazards due to vehicle conflicts. The project would be required to comply with the requirements of the Knights Landing Fire District and the County Community Services Department for driveway design and maintaining adequate emergency access. Therefore, the proposed project would not create a safety hazard, or degrade emergency access to the project site.

Thus, the proposed project would result in ***less-than-significant*** impacts related to emergency vehicle access, the creation of safety risks, and the provision of adequate parking facilities.

Air Traffic Patterns

The proposed project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that would result in substantial safety risks. The proposed project would not include any improvements to airports or change air traffic patterns. Therefore, ***no impact*** related to air traffic patterns would occur with implementation of the proposed project.

Alternative Transportation

Transit facilities and bicycle facilities do not currently exist at the project site. Sidewalks do exist within the project site, and the proposed project would involve the paving of more sidewalk and accessible areas for pedestrians. Although substantial transit and bicycle facilities do not occur at the project site, access to the site is free for pedestrians and bicyclists, and would continue to be so with implementation of the proposed project, in order to promote bicycling as an alternative form of transportation. Thus, the proposed project would not conflict with adopted policies, plans, or programs supporting alternative transportation, and a ***less-than-significant*** impact would result.

Utilities and Service Systems

Existing Setting

The existing Knights Landing Boat Launch Facility does not include connections to wastewater or water infrastructure. Potable water is not available at the facility, and wastewater is collected in chemical restroom units prior to being transported to a wastewater treatment facility. Waste generated at the facility is taken to the County landfill for disposal.

Standards of Significance

Would the Project:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Comply with federal, state, and local statutes and regulations related to solid waste?

Effects

The proposed project includes provision of water at the project site, upgrades to the on-site wastewater infrastructure, and various other renovations.

Water Service

Water service at the project site would be accommodated by a newly constructed on-site water well. A permit from the Yolo County Environmental Health Division would be required prior to operation of the proposed well. Water from the proposed well would be used to support an on-site camp host and minor maintenance activity. The anticipated water demand from operation of the proposed project would be small, and could be accommodated by the well. Because water for the project site would be provided by an on-site well, new entitlements from a water service provider would not be required. As a result, the proposed project would result in a ***less-than-significant*** impact related to the allocation of sufficient water supplies without the need for new or expanded entitlements.

Wastewater

The new restroom facility included in the proposed project would store effluent in sealed vault storage containers. The sealed containers would be pumped and transported to a wastewater treatment plant. Currently, restrooms on-site are chemical toilets, that are periodically pumped, and the wastewater transported to a wastewater treatment plant. Therefore, wastewater generated at the project site is already treated at a wastewater treatment plant. Implementation of the proposed project is not anticipated to increase the amount of waste generated on the project site,

and wastewater would continue to be transported off-site for treatment. Because wastewater from the site is currently and would continue to be treated off-site, the proposed project would not result in increased wastewater discharge that would exceed the capacity of the wastewater treatment provider. Consequently, the proposed project would result in the determination by the wastewater treatment provider that serves the site, that adequate capacity exists to serve the proposed project, and a ***less-than-significant*** impact would result.

Solid Waste

Renovation activities may generate construction and demolition wastes. However, the majority of existing pavement would be repaved, rather than completely removed. As discussed in the Air Quality section of this document, construction of the proposed project would result in the export of approximately 500 CY of material. The California Building Codes include strict requirements for the reuse and recycling of construction debris, including the requirement that some projects achieve a construction and demolition waste diversion rate of 65 percent. Even without considering mandatory diversions, the 500 CY of waste from the project would equate to only 0.001 percent of the Yolo County Central Landfill's available capacity of approximately 36,555,700 CY.[46]

The amount of operational waste generated through operation of the facility is not anticipated to be altered by the proposed project.

Considering the above discussion, the proposed project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs, and a ***less-than-significant*** impact would occur.

Mandatory Findings of Significance

Standards of Significance

Effects of the project would be considered significant if any of the following are true:

- Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, 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?
- Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?
- Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

[46] California Department of Resources Recycling and Recovery (CalRecycle) Permits and Assistance, North Central Section. Personal email communication with Raney Planning & Management Inc. March 23, 2015.

Effects

As discussed above, implementation of the proposed project would have the potential to adversely impact the environment by adversely affecting special status species. However, with implementation of the mitigation measures required by this IS/MND as well as compliance with County Code requirements, the development of the proposed project would not result in any of the following: 1) degradation of the quality of the environment; 2) substantial reduction of or impact to the habitat of fish or wildlife species; 3) fish or wildlife populations to drop below self-sustaining levels; 4) elimination of a plant or animal community; 5) reduction of the number or restriction of the range of a rare or endangered plant or animal; or 6) elimination of important examples of the major periods of California history or prehistory. Furthermore, the proposed project would not result in environmental effects that could cause substantial adverse effects on human beings. Therefore, a ***less-than-significant*** impact would occur.

CUMULATIVE EFFECTS

A cumulative effect is the effect on the environment that results from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions. The Knights Landing Boat Launch Project would consist of relatively minor improvements to the existing Knights Landing Boat Launch Facility. The proposed project would be consistent with the General Plan land use designation and zoning for the project site and, as such, the proposed project was included in the cumulative analysis of County buildout in the County General Plan. Applicable policies from the General Plan would be implemented as part of the proposed project, as well as the project-specific mitigation measures included in this IS/MND, to ensure any potential impacts of the proposed project would be individually limited and not cumulatively considerable. When viewed in conjunction with other closely related past, present or reasonably foreseeable future projects, development of the proposed project would not contribute to cumulative impacts in Yolo County.

SUMMARY OF FINDINGS AND CONCLUSIONS

Based on the analysis of this IS/MND, construction of the proposed Knights Landing Boat Launch Facility would have the potential to result in adverse environmental impacts related to special status species, tribal cultural resources, and cultural resources. However, this IS/MND imposes mitigation measures on the proposed project that would ensure that potential impacts to special status species, tribal cultural resources, and cultural resources would be reduced to less-than-significant levels under CEQA.

Mitigation Measures Recommended
Required modifications to the project or to project related activities that would minimize adverse environmental impacts and restore or enhance environmental quality.

Mitigation Measure 1 *A Section 404 Permit and a Water Quality Certification from the Regional Water Quality Control Board, under Section 401 of the*

Clean Water Act, must be obtained prior to issuance of any grading permits. The County shall acquire a Section 404 permit for fill of jurisdictional wetlands, and mitigation for impacts to jurisdictional waters that cannot be avoided shall be provided in conformance with the USACE "no-net-loss" policy. Potential portions for mitigating the loss of wetland habitat include restoration of on-site wetland habitat, restoration of off-site wetland habitat, or the purchase of mitigation credits. The mitigation for the proposed project shall conform with guidance from the USACE.

Giant Garter Snake and Northern Western Pond Turtles

Mitigation Measure 2(a) *A USFWS-approved biologist shall conduct a pre-construction survey of the project site (including the mixed riparian forest lying within the larger project site, but outside of proposed work areas) for giant garter snakes and northern western pond turtles within 15 days prior to the onset of construction. The information collected from this pre-construction survey shall serve primarily to alert the biologist and construction crews of the general level of giant garter snake and northern western pond turtles activity at the site. Following the pre-construction survey and prior to initiating any in-water work, an exclusion fence shall be installed along both sides of the boat launch access. The fence shall be constructed with non-climb material (e.g., silt fence) to provide an additional barrier to detour wildlife from entering the work area. A qualified biologist shall supervise placement and installation of the exclusion fence. The exclusion area shall be flagged as a Sensitive Resource Area. Construction personnel shall be directed to avoid entering the exclusion area, except as needed to construct the project. A qualified biologist shall prepare plans for the exclusion fencing, and such plans shall be submitted for approval to the Yolo County General Services Department prior to initiation of any in-water work.*

Mitigation Measure 2(b) *If in-water construction occurs anytime between September 9th and October 1st, a USFWS-approved biological monitor shall be on-site to conduct pre-construction surveys of the project site each morning, preceding the initiation of site work. Any wildlife, including giant garter snakes and northern western pond turtles, observed in the project area shall be allowed to relocate prior to the initiation or re-commencement of construction.*

Mitigation Measure 2(c) *Prior to issuance of a grading permit for the project, the General Services Department of Yolo County shall inspect grading and other relevant improvement plans to ensure that the area of vegetation clearing has been limited to the extent feasible. In particular, clearing of vegetation shall be limited to those areas necessary to facilitate construction activity.*

Chinook Salmon, Steelhead Juveniles, White Sturgeon, and Green Sturgeon

Mitigation Measure 3 *Should project construction commence at a time of year when juvenile salmon, steelhead smolts, or juvenile sturgeon could be present in Sycamore Slough (i.e., between February 1st and September 1st), the County shall develop, in consultation with the National Marine Fisheries Service (NMFS) and the CDFW, a Water Quality Protection Plan, the provisions of which would be in effect whenever work must occur within the aquatic environment. Such a plan may employ the use of a turbidity curtain or some other type of sediment barrier that would confine suspended sediment to the immediate vicinity of the project-related work. Such a plan must be approved by NMFS and the CDFW prior to initiating work on the project.*

Mitigation Measure 4 *A certified biologist shall be present to monitor all in-water work related to the proposed project. The biologist shall ensure compliance with the project-specific Water Quality Protection Plan through on-going monitoring during in-water work. If the monitoring biologist determines that in-water work is being conducted in violation of the Water Quality Protection Plan, in-water work shall cease until such time as the certified biologist and the General Services Department of Yolo County have addressed and rectified the identified issues to the satisfaction of the NMFS and the CDFW.*

MBTA Covered Species and Nesting Raptors

Mitigation Measure 5(a) *If project construction activities must occur during the nesting season (i.e., February 1 through August 31), a qualified biologist shall conduct preconstruction surveys for active raptor and migratory bird nests within 30 days prior to the onset of construction activities. The survey shall include the proposed work area(s) and surrounding lands within 500 feet for all nesting raptors and migratory birds. If nesting pairs are not found within the survey area, further mitigation would not be required. Results*

of the survey shall be submitted to the General Services Department of Yolo County for review and approval.

Mitigation Measure 5(b) — *Should any active nests be discovered near proposed work areas, a qualified biologist shall determine appropriate construction setback distances based on applicable CDFW guidelines and/or the biology of the affected species. Construction-free buffers shall be identified on the ground with flagging, fencing, or by other easily visible means, and shall be maintained until the biologist has determined that the young have fledged.*

Mitigation Measure 6 — *If any prehistoric artifacts or other indications of archaeological resources (such as chipped chert and obsidian tools and tool manufacture waste flakes; grinding and hammering implements; bones; ceramic; glass; metal; at some sites locally darkened soils that generally contain abundant archaeological specimens; structure foundations; or pits) are found during grading and construction activities, all work within 100 feet of the find shall cease and the General Services Department of Yolo County shall retain a qualified archaeologist to evaluate the find(s). If the resource is determined to be eligible for inclusion in the California Register of Historical Resources and project impacts cannot be avoided, data recovery shall be undertaken. Pursuant to CEQA Guidelines Section 15126.4(b)(3)(C), a data recovery plan, which makes provisions for adequately recovering the scientifically consequential information from and about the resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Archeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code. If an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation. The language of this mitigation measure shall be included on any future grading plans approved by the County for the proposed project site.*

Mitigation Measure 7 — *In the event of the discovery or recognition of any human remains, further excavation or disturbance of the find or any area within 100 feet of the find that is reasonably suspected to overlie adjacent human remains shall not occur until compliance with the provisions of CEQA Guidelines Section 15064.5(e)(1) and (2) has occurred. The Guidelines specify that in the event of the discovery of human remains other than in a dedicated cemetery, no further excavation at the site or any nearby area suspected to contain*

human remains shall occur until the County Coroner has been notified to determine if an investigation into the cause of death is required. If the coroner determines that the remains are Native American, then, within 24 hours, the Coroner must notify the Native American Heritage Commission, which in turn will notify the most likely descendants who may recommend treatment of the remains and any grave goods. If the Native American Heritage Commission is unable to identify a most likely descendant or most likely descendant fails to make a recommendation within 24 hours after notification by the Native American Heritage Commission, or the County rejects the recommendation by the most likely descendant and mediation by the Native American Heritage Commission fails to provide a measure acceptable to the County, then the County shall rebury the human remains and grave goods with appropriate dignity at a location on the property not subject to further disturbances. Should human remains be encountered, a copy of the resulting County Coroner report noting any written consultation with the Native American Heritage Commission shall be submitted as proof of compliance to the Yolo County Department of General Services.

Mitigation Measure 8

The General Services Department of Yolo County shall submit grading details to tribes who have requested consultation on this project under Public Resources Code Section 21080.3.1. The grading details can be submitted in the form of a grading plan and shall set forth the plan and methodology for grading, including a timeline, grading locations, and other pertinent details including but not limited to the types of equipment to be used. At least 10 business days prior to project grading, the County shall contact the tribe(s), who have requested consultation, to notify the tribe(s) of grading. Tribe(s) shall be allowed access to the site for monitoring purposes during ground disturbing activities only, if they so desire.

For any resources identified as meeting the definition of tribal cultural resources set forth in Public Resources Code Section 21074, significance determinations shall be measured in terms of criteria for inclusion on the California Register of Historical Resources (Title 14 CCR, §4852[a]). The evaluation of the tribal cultural resource(s) shall include culturally appropriate temporary and permanent treatment, which may include avoidance of tribal cultural resources, in-place preservation, and/or re-burial on project property so the resource(s) are not subject to further

disturbance in perpetuity. Any reburial shall occur at a location predetermined between the County and tribe.

The County shall relinquish ownership of all sacred items, burial goods, and all archaeological artifacts that are found on the project area to the tribe for proper treatment and disposition.

Mitigation Measure 9 *Implement Mitigation Measure 1.*

Additional Studies Performed

- Live Oak Associates, Inc. *Biotic Evaluation Knights Landing Boat Launch Improvements Project*. July 18, 2017.
- Tom Origer & Associates. *A Cultural Resources Study for the Knights Landing Boat Launch Project*. June 16, 2017.
- Raney Planning & Management. Air Quality and Greenhouse Gas Emissions Analysis. June 2017.

List of Sources, Agencies and Persons Consulted

- California Department of Resources Recycling and Recovery (CalRecycle) Permits and Assistance, North Central Section. Personal email communication with Raney Planning & Management Inc. March 23, 2015.
- California Department of Toxic Substances Control. *EnviroStor*. Accessible at http://www.envirostor.dtsc.ca.gov/public/. Accessed June 2017.
- California Department of Transportation. *California Scenic Highway Mapping System*. Available at http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/. Accessed June 2017.
- County of Yolo. *2030 Countywide General Plan*. November 10, 2009.
- County of Yolo. *Storm Water Management*. Available at http://www.yolocounty.org/community-services/planning-public-works/public-works-division/storm-water-management. Accessed June 2017.
- Federal Emergency Management Agency. *Flood Insurance Rate Map: Map Number 06113C0315G*. June 18, 2010.
- Live Oak Associates, Inc. *Biotic Evaluation Knights Landing Boat Launch Improvements Project*. July 18, 2017.
- Tom Origer & Associates. *A Cultural Resources Study for the Knights Landing Boat Launch Project*. June 16, 2017.
- Yolo County Administrator's Office. *Yolo County Sustainable Parks Study*. June 14, 2016.
- Yolo-Solano Air Quality Management District. *Handbook for Assessing and Mitigating Air Quality Impacts*. July 11, 2007.
- Yolo-Solano Air Quality Management District. *State Standards and Planning*. Available at: http://www.ysaqmd.org/planning/state.php. Accessed November 2016.

- Yolo-Solano Air Quality Management District. *Triennial Assessment and Plan Update*. April 2013.

APPENDIX A

AIR QUALITY AND GHG MODELING RESULTS

Knights Landing Boat Launch (Construction Activity)

Yolo/Solano AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	60.00	Space	1.50	24,000.00	0
Other Asphalt Surfaces	2.00	1000sqft	0.05	2,000.00	0
City Park	0.01	Acre	0.01	350.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	55
Climate Zone	2			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - *

Construction Phase - Information from County

Grading - County Information

Demolition -

Vehicle Trips - Operational Emissions not modeled

Area Mitigation -

Knights Landing Boat Launch (Construction Activity) - Yolo/Solano AQMD Air District, Annual

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	200.00	80.00
tblConstructionPhase	NumDays	4.00	30.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	NumDays	2.00	20.00
tblConstructionPhase	PhaseEndDate	4/30/2018	11/30/2018
tblConstructionPhase	PhaseEndDate	4/30/2018	11/24/2018
tblConstructionPhase	PhaseEndDate	4/30/2018	5/28/2018
tblConstructionPhase	PhaseEndDate	4/30/2018	7/6/2018
tblConstructionPhase	PhaseEndDate	4/30/2018	8/3/2018
tblConstructionPhase	PhaseEndDate	4/30/2018	6/25/2018
tblConstructionPhase	PhaseStartDate	5/1/2018	11/25/2018
tblConstructionPhase	PhaseStartDate	5/1/2018	8/4/2018
tblConstructionPhase	PhaseStartDate	5/1/2018	5/26/2018
tblConstructionPhase	PhaseStartDate	5/1/2018	7/7/2018
tblConstructionPhase	PhaseStartDate	5/1/2018	5/29/2018
tblGrading	AcresOfGrading	11.25	2.00
tblGrading	AcresOfGrading	10.00	0.00
tblGrading	MaterialExported	0.00	250.00
tblGrading	MaterialExported	0.00	150.00
tblGrading	MaterialImported	0.00	500.00
tblLandUse	BuildingSpaceSquareFeet	0.00	350.00
tblLandUse	LandUseSquareFeet	348.48	350.00
tblLandUse	LotAcreage	0.54	1.50
tblProjectCharacteristics	OperationalYear	2018	2020

tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.1965	1.5603	1.0297	1.8600e-003	1.3548	0.0849	1.4397	0.1915	0.0803	0.2718	0.0000	163.1492	163.1492	0.0359	0.0000	164.0454
Maximum	**0.1965**	**1.5603**	**1.0297**	**1.8600e-003**	**1.3548**	**0.0849**	**1.4397**	**0.1915**	**0.0803**	**0.2718**	**0.0000**	**163.1492**	**163.1492**	**0.0359**	**0.0000**	**164.0454**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.1965	1.5603	1.0297	1.8600e-003	0.1350	0.0849	0.2199	0.0698	0.0803	0.1501	0.0000	163.1490	163.1490	0.0359	0.0000	164.0452
Maximum	**0.1965**	**1.5603**	**1.0297**	**1.8600e-003**	**0.1350**	**0.0849**	**0.2199**	**0.0698**	**0.0803**	**0.1501**	**0.0000**	**163.1490**	**163.1490**	**0.0359**	**0.0000**	**164.0452**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**90.04**	**0.00**	**84.73**	**63.57**	**0.00**	**44.78**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**5-1-2018**	**7-31-2018**	0.9005	0.9005
2	**8-1-2018**	**9-30-2018**	0.4419	0.4419
		Highest	0.9005	0.9005

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.5300e-003	1.0000e-005	5.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1100e-003	1.1100e-003	0.0000	0.0000	1.1800e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.1441	6.1441	2.8000e-004	6.0000e-005	6.1681
Mobile	2.0000e-005	1.5000e-004	2.3000e-004	0.0000	3.5400e-003	0.0000	3.5400e-003	3.6000e-004	0.0000	3.6000e-004	0.0000	0.0793	0.0793	0.0000	0.0000	0.0795
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0121	0.0121	0.0000	0.0000	0.0122
Total	**2.5500e-003**	**1.6000e-004**	**8.0000e-004**	**0.0000**	**3.5400e-003**	**0.0000**	**3.5400e-003**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**6.2366**	**6.2366**	**2.8000e-004**	**6.0000e-005**	**6.2609**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.5300e-003	1.0000e-005	5.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1100e-003	1.1100e-003	0.0000	0.0000	1.1800e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	6.1441	6.1441	2.8000e-004	6.0000e-005	6.1681
Mobile	2.0000e-005	1.5000e-004	2.3000e-004	0.0000	3.5400e-003	0.0000	3.5400e-003	3.6000e-004	0.0000	3.6000e-004	0.0000	0.0793	0.0793	0.0000	0.0000	0.0795
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0121	0.0121	0.0000	0.0000	0.0122
Total	**2.5500e-003**	**1.6000e-004**	**8.0000e-004**	**0.0000**	**3.5400e-003**	**0.0000**	**3.5400e-003**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**0.0000**	**6.2366**	**6.2366**	**2.8000e-004**	**6.0000e-005**	**6.2609**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**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**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Knights Landing Boat Launch (Construction Activity) - Yolo/Solano AQMD Air District, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	11/25/2018	11/30/2018	5	5	
2	Building Construction	Building Construction	8/4/2018	11/24/2018	5	80	
3	Demolition	Demolition	5/1/2018	5/28/2018	5	20	
4	Grading	Grading	5/26/2018	7/6/2018	5	30	
5	Paving	Paving	7/7/2018	8/3/2018	5	20	
6	Site Preparation	Site Preparation	5/29/2018	6/25/2018	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 2

Acres of Paving: 1.55

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 525; Non-Residential Outdoor: 175; Striped Parking Area: 1,560 (Architectural Coating – sqft)

OffRoad Equipment

Knights Landing Boat Launch (Construction Activity) - Yolo/Solano AQMD Air District, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	2.00	0.00	0.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	11.00	4.00	0.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	12.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	94.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	19.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	7.8600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-004	5.0100e-003	4.6400e-003	1.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398
Total	**8.6100e-003**	**5.0100e-003**	**4.6400e-003**	**1.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**6.0000e-005**	**0.0000**	**0.6398**

3.2 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.1000e-004	0.0000	5.6800e-003	0.0000	5.6800e-003	5.8000e-004	0.0000	5.8000e-004	0.0000	0.0531	0.0531	0.0000	0.0000	0.0532
Total	**3.0000e-005**	**2.0000e-005**	**2.1000e-004**	**0.0000**	**5.6800e-003**	**0.0000**	**5.6800e-003**	**5.8000e-004**	**0.0000**	**5.8000e-004**	**0.0000**	**0.0531**	**0.0531**	**0.0000**	**0.0000**	**0.0532**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	7.8600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.5000e-004	5.0100e-003	4.6400e-003	1.0000e-005		3.8000e-004	3.8000e-004		3.8000e-004	3.8000e-004	0.0000	0.6383	0.6383	6.0000e-005	0.0000	0.6398
Total	**8.6100e-003**	**5.0100e-003**	**4.6400e-003**	**1.0000e-005**		**3.8000e-004**	**3.8000e-004**		**3.8000e-004**	**3.8000e-004**	**0.0000**	**0.6383**	**0.6383**	**6.0000e-005**	**0.0000**	**0.6398**

3.2 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.1000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0531	0.0531	0.0000	0.0000	0.0532
Total	**3.0000e-005**	**2.0000e-005**	**2.1000e-004**	**0.0000**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0531**	**0.0531**	**0.0000**	**0.0000**	**0.0532**

3.3 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1037	0.6971	0.5551	8.8000e-004		0.0423	0.0423		0.0409	0.0409	0.0000	73.6938	73.6938	0.0148	0.0000	74.0647
Total	**0.1037**	**0.6971**	**0.5551**	**8.8000e-004**		**0.0423**	**0.0423**		**0.0409**	**0.0409**	**0.0000**	**73.6938**	**73.6938**	**0.0148**	**0.0000**	**74.0647**

3.3 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.8000e-004	0.0233	5.2600e-003	6.0000e-005	0.1092	1.7000e-004	0.1094	0.0111	1.6000e-004	0.0113	0.0000	5.2420	5.2420	3.0000e-004	0.0000	5.2495
Worker	2.4900e-003	1.9100e-003	0.0186	5.0000e-005	0.4996	3.0000e-005	0.4996	0.0506	3.0000e-005	0.0507	0.0000	4.6749	4.6749	1.4000e-004	0.0000	4.6783
Total	**3.3700e-003**	**0.0252**	**0.0239**	**1.1000e-004**	**0.6088**	**2.0000e-004**	**0.6090**	**0.0618**	**1.9000e-004**	**0.0620**	**0.0000**	**9.9169**	**9.9169**	**4.4000e-004**	**0.0000**	**9.9278**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1037	0.6971	0.5551	8.8000e-004		0.0423	0.0423		0.0409	0.0409	0.0000	73.6938	73.6938	0.0148	0.0000	74.0646
Total	**0.1037**	**0.6971**	**0.5551**	**8.8000e-004**		**0.0423**	**0.0423**		**0.0409**	**0.0409**	**0.0000**	**73.6938**	**73.6938**	**0.0148**	**0.0000**	**74.0646**

3.3 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.8000e-004	0.0233	5.2600e-003	6.0000e-005	1.2400e-003	1.7000e-004	1.4100e-003	3.6000e-004	1.6000e-004	5.3000e-004	0.0000	5.2420	5.2420	3.0000e-004	0.0000	5.2495
Worker	2.4900e-003	1.9100e-003	0.0186	5.0000e-005	4.6000e-003	3.0000e-005	4.6400e-003	1.2300e-003	3.0000e-005	1.2600e-003	0.0000	4.6749	4.6749	1.4000e-004	0.0000	4.6783
Total	**3.3700e-003**	**0.0252**	**0.0239**	**1.1000e-004**	**5.8400e-003**	**2.0000e-004**	**6.0500e-003**	**1.5900e-003**	**1.9000e-004**	**1.7900e-003**	**0.0000**	**9.9169**	**9.9169**	**4.4000e-004**	**0.0000**	**9.9278**

3.4 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5000e-003	0.0000	1.5000e-003	2.3000e-004	0.0000	2.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0248	0.2436	0.1511	2.4000e-004		0.0144	0.0144		0.0134	0.0134	0.0000	21.6923	21.6923	5.5000e-003	0.0000	21.8297
Total	**0.0248**	**0.2436**	**0.1511**	**2.4000e-004**	**1.5000e-003**	**0.0144**	**0.0159**	**2.3000e-004**	**0.0134**	**0.0137**	**0.0000**	**21.6923**	**21.6923**	**5.5000e-003**	**0.0000**	**21.8297**

3.4 Demolition - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	1.8600e-003	3.0000e-004	1.0000e-005	9.1000e-003	1.0000e-005	9.1000e-003	9.2000e-004	1.0000e-005	9.3000e-004	0.0000	0.4771	0.4771	2.0000e-005	0.0000	0.4776
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	5.6000e-004	5.5000e-003	2.0000e-005	0.1476	1.0000e-005	0.1476	0.0150	1.0000e-005	0.0150	0.0000	1.3812	1.3812	4.0000e-005	0.0000	1.3822
Total	**8.0000e-004**	**2.4200e-003**	**5.8000e-003**	**3.0000e-005**	**0.1567**	**2.0000e-005**	**0.1567**	**0.0159**	**2.0000e-005**	**0.0159**	**0.0000**	**1.8583**	**1.8583**	**6.0000e-005**	**0.0000**	**1.8598**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5000e-003	0.0000	1.5000e-003	2.3000e-004	0.0000	2.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0248	0.2436	0.1511	2.4000e-004		0.0144	0.0144		0.0134	0.0134	0.0000	21.6923	21.6923	5.5000e-003	0.0000	21.8297
Total	**0.0248**	**0.2436**	**0.1511**	**2.4000e-004**	**1.5000e-003**	**0.0144**	**0.0159**	**2.3000e-004**	**0.0134**	**0.0137**	**0.0000**	**21.6923**	**21.6923**	**5.5000e-003**	**0.0000**	**21.8297**

3.4 Demolition - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	1.8600e-003	3.0000e-004	1.0000e-005	1.0000e-004	1.0000e-005	1.1000e-004	3.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.4771	0.4771	2.0000e-005	0.0000	0.4776
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	5.6000e-004	5.5000e-003	2.0000e-005	1.3600e-003	1.0000e-005	1.3700e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.3812	1.3812	4.0000e-005	0.0000	1.3822
Total	**8.0000e-004**	**2.4200e-003**	**5.8000e-003**	**3.0000e-005**	**1.4600e-003**	**2.0000e-005**	**1.4800e-003**	**3.9000e-004**	**2.0000e-005**	**4.0000e-004**	**0.0000**	**1.8583**	**1.8583**	**6.0000e-005**	**0.0000**	**1.8598**

3.5 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0690	0.0000	0.0690	0.0374	0.0000	0.0374	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0225	0.2560	0.1015	2.1000e-004		0.0119	0.0119		0.0110	0.0110	0.0000	19.3402	19.3402	6.0200e-003	0.0000	19.4907
Total	**0.0225**	**0.2560**	**0.1015**	**2.1000e-004**	**0.0690**	**0.0119**	**0.0809**	**0.0374**	**0.0110**	**0.0484**	**0.0000**	**19.3402**	**19.3402**	**6.0200e-003**	**0.0000**	**19.4907**

3.5 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.4000e-004	0.0146	2.3600e-003	4.0000e-005	0.0713	6.0000e-005	0.0713	7.2500e-003	6.0000e-005	7.3100e-003	0.0000	3.7371	3.7371	1.6000e-004	0.0000	3.7413
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8000e-004	5.2000e-004	5.0700e-003	1.0000e-005	0.1363	1.0000e-005	0.1363	0.0138	1.0000e-005	0.0138	0.0000	1.2750	1.2750	4.0000e-005	0.0000	1.2759
Total	**1.1200e-003**	**0.0151**	**7.4300e-003**	**5.0000e-005**	**0.2075**	**7.0000e-005**	**0.2076**	**0.0211**	**7.0000e-005**	**0.0211**	**0.0000**	**5.0121**	**5.0121**	**2.0000e-004**	**0.0000**	**5.0172**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0690	0.0000	0.0690	0.0374	0.0000	0.0374	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0225	0.2560	0.1014	2.1000e-004		0.0119	0.0119		0.0110	0.0110	0.0000	19.3402	19.3402	6.0200e-003	0.0000	19.4907
Total	**0.0225**	**0.2560**	**0.1014**	**2.1000e-004**	**0.0690**	**0.0119**	**0.0809**	**0.0374**	**0.0110**	**0.0484**	**0.0000**	**19.3402**	**19.3402**	**6.0200e-003**	**0.0000**	**19.4907**

3.5 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.4000e-004	0.0146	2.3600e-003	4.0000e-005	7.6000e-004	6.0000e-005	8.3000e-004	2.1000e-004	6.0000e-005	2.7000e-004	0.0000	3.7371	3.7371	1.6000e-004	0.0000	3.7413
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8000e-004	5.2000e-004	5.0700e-003	1.0000e-005	1.2600e-003	1.0000e-005	1.2600e-003	3.4000e-004	1.0000e-005	3.4000e-004	0.0000	1.2750	1.2750	4.0000e-005	0.0000	1.2759
Total	**1.1200e-003**	**0.0151**	**7.4300e-003**	**5.0000e-005**	**2.0200e-003**	**7.0000e-005**	**2.0900e-003**	**5.5000e-004**	**7.0000e-005**	**6.1000e-004**	**0.0000**	**5.0121**	**5.0121**	**2.0000e-004**	**0.0000**	**5.0172**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0102	0.1045	0.0899	1.4000e-004		6.1000e-003	6.1000e-003		5.6200e-003	5.6200e-003	0.0000	12.2147	12.2147	3.7300e-003	0.0000	12.3079
Paving	2.0300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0122**	**0.1045**	**0.0899**	**1.4000e-004**		**6.1000e-003**	**6.1000e-003**		**5.6200e-003**	**5.6200e-003**	**0.0000**	**12.2147**	**12.2147**	**3.7300e-003**	**0.0000**	**12.3079**

3.6 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	5.6000e-004	5.5000e-003	2.0000e-005	0.1476	1.0000e-005	0.1476	0.0150	1.0000e-005	0.0150	0.0000	1.3812	1.3812	4.0000e-005	0.0000	1.3822
Total	**7.4000e-004**	**5.6000e-004**	**5.5000e-003**	**2.0000e-005**	**0.1476**	**1.0000e-005**	**0.1476**	**0.0150**	**1.0000e-005**	**0.0150**	**0.0000**	**1.3812**	**1.3812**	**4.0000e-005**	**0.0000**	**1.3822**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0102	0.1045	0.0899	1.4000e-004		6.1000e-003	6.1000e-003		5.6200e-003	5.6200e-003	0.0000	12.2147	12.2147	3.7300e-003	0.0000	12.3079
Paving	2.0300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0122**	**0.1045**	**0.0899**	**1.4000e-004**		**6.1000e-003**	**6.1000e-003**		**5.6200e-003**	**5.6200e-003**	**0.0000**	**12.2147**	**12.2147**	**3.7300e-003**	**0.0000**	**12.3079**

3.6 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	5.6000e-004	5.5000e-003	2.0000e-005	1.3600e-003	1.0000e-005	1.3700e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.3812	1.3812	4.0000e-005	0.0000	1.3822
Total	**7.4000e-004**	**5.6000e-004**	**5.5000e-003**	**2.0000e-005**	**1.3600e-003**	**1.0000e-005**	**1.3700e-003**	**3.6000e-004**	**1.0000e-005**	**3.7000e-004**	**0.0000**	**1.3812**	**1.3812**	**4.0000e-005**	**0.0000**	**1.3822**

3.7 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0527	0.0000	0.0527	0.0290	0.0000	0.0290	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0181	0.2075	0.0808	1.7000e-004		9.5200e-003	9.5200e-003		8.7600e-003	8.7600e-003	0.0000	15.7430	15.7430	4.9000e-003	0.0000	15.8655
Total	**0.0181**	**0.2075**	**0.0808**	**1.7000e-004**	**0.0527**	**9.5200e-003**	**0.0623**	**0.0290**	**8.7600e-003**	**0.0377**	**0.0000**	**15.7430**	**15.7430**	**4.9000e-003**	**0.0000**	**15.8655**

3.7 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.0000e-005	2.9400e-003	4.8000e-004	1.0000e-005	0.0144	1.0000e-005	0.0144	1.4600e-003	1.0000e-005	1.4800e-003	0.0000	0.7554	0.7554	3.0000e-005	0.0000	0.7562
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	3.5000e-004	3.3800e-003	1.0000e-005	0.0908	1.0000e-005	0.0908	9.2000e-003	1.0000e-005	9.2100e-003	0.0000	0.8500	0.8500	3.0000e-005	0.0000	0.8506
Total	**5.4000e-004**	**3.2900e-003**	**3.8600e-003**	**2.0000e-005**	**0.1052**	**2.0000e-005**	**0.1053**	**0.0107**	**2.0000e-005**	**0.0107**	**0.0000**	**1.6054**	**1.6054**	**6.0000e-005**	**0.0000**	**1.6068**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0527	0.0000	0.0527	0.0290	0.0000	0.0290	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0181	0.2075	0.0808	1.7000e-004		9.5200e-003	9.5200e-003		8.7600e-003	8.7600e-003	0.0000	15.7429	15.7429	4.9000e-003	0.0000	15.8655
Total	**0.0181**	**0.2075**	**0.0808**	**1.7000e-004**	**0.0527**	**9.5200e-003**	**0.0623**	**0.0290**	**8.7600e-003**	**0.0377**	**0.0000**	**15.7429**	**15.7429**	**4.9000e-003**	**0.0000**	**15.8655**

3.7 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.0000e-005	2.9400e-003	4.8000e-004	1.0000e-005	1.5000e-004	1.0000e-005	1.7000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.7554	0.7554	3.0000e-005	0.0000	0.7562
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	3.5000e-004	3.3800e-003	1.0000e-005	8.4000e-004	1.0000e-005	8.4000e-004	2.2000e-004	1.0000e-005	2.3000e-004	0.0000	0.8500	0.8500	3.0000e-005	0.0000	0.8506
Total	**5.4000e-004**	**3.2900e-003**	**3.8600e-003**	**2.0000e-005**	**9.9000e-004**	**2.0000e-005**	**1.0100e-003**	**2.6000e-004**	**2.0000e-005**	**2.8000e-004**	**0.0000**	**1.6054**	**1.6054**	**6.0000e-005**	**0.0000**	**1.6068**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.0000e-005	1.5000e-004	2.3000e-004	0.0000	3.5400e-003	0.0000	3.5400e-003	3.6000e-004	0.0000	3.6000e-004	0.0000	0.0793	0.0793	0.0000	0.0000	0.0795
Unmitigated	2.0000e-005	1.5000e-004	2.3000e-004	0.0000	3.5400e-003	0.0000	3.5400e-003	3.6000e-004	0.0000	3.6000e-004	0.0000	0.0793	0.0793	0.0000	0.0000	0.0795

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.02	0.18	0.13	156	156
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	0.02	0.18	0.13	156	156

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	15.00	8.00	9.00	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	15.00	8.00	9.00	0.00	0.00	0.00	0	0	0
Parking Lot	15.00	8.00	9.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.516533	0.039972	0.192974	0.121896	0.024730	0.005840	0.032766	0.052716	0.001342	0.002151	0.007335	0.000694	0.001052
Other Asphalt Surfaces	0.516533	0.039972	0.192974	0.121896	0.024730	0.005840	0.032766	0.052716	0.001342	0.002151	0.007335	0.000694	0.001052
City Park	0.516533	0.039972	0.192974	0.121896	0.024730	0.005840	0.032766	0.052716	0.001342	0.002151	0.007335	0.000694	0.001052

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6.1441	6.1441	2.8000e-004	6.0000e-005	6.1681
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6.1441	6.1441	2.8000e-004	6.0000e-005	6.1681
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	21120	6.1441	2.8000e-004	6.0000e-005	6.1681
Total		**6.1441**	**2.8000e-004**	**6.0000e-005**	**6.1681**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	21120	6.1441	2.8000e-004	6.0000e-005	6.1681
Total		**6.1441**	**2.8000e-004**	**6.0000e-005**	**6.1681**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.5300e-003	1.0000e-005	5.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1100e-003	1.1100e-003	0.0000	0.0000	1.1800e-003
Unmitigated	2.5300e-003	1.0000e-005	5.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1100e-003	1.1100e-003	0.0000	0.0000	1.1800e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	7.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.6900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1100e-003	1.1100e-003	0.0000	0.0000	1.1800e-003
Total	**2.5300e-003**	**1.0000e-005**	**5.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.1100e-003**	**1.1100e-003**	**0.0000**	**0.0000**	**1.1800e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	7.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.6900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.0000e-005	1.0000e-005	5.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1100e-003	1.1100e-003	0.0000	0.0000	1.1800e-003
Total	**2.5300e-003**	**1.0000e-005**	**5.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.1100e-003**	**1.1100e-003**	**0.0000**	**0.0000**	**1.1800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0121	0.0000	0.0000	0.0122
Unmitigated	0.0121	0.0000	0.0000	0.0122

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.0119148	0.0121	0.0000	0.0000	0.0122
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0121**	**0.0000**	**0.0000**	**0.0122**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.0119148	0.0121	0.0000	0.0000	0.0122
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0121**	**0.0000**	**0.0000**	**0.0122**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Knights Landing Boat Launch (Construction Activity)

Yolo/Solano AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	60.00	Space	1.50	24,000.00	0
Other Asphalt Surfaces	2.00	1000sqft	0.05	2,000.00	0
City Park	0.01	Acre	0.01	350.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	55
Climate Zone	2			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - *

Construction Phase - Information from County

Grading - County Information

Demolition -

Vehicle Trips - Operational Emissions not modeled

Area Mitigation -

Knights Landing Boat Launch (Construction Activity) - Yolo/Solano AQMD Air District, Summer

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	200.00	80.00
tblConstructionPhase	NumDays	4.00	30.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	NumDays	2.00	20.00
tblConstructionPhase	PhaseEndDate	4/30/2018	11/30/2018
tblConstructionPhase	PhaseEndDate	4/30/2018	11/24/2018
tblConstructionPhase	PhaseEndDate	4/30/2018	5/28/2018
tblConstructionPhase	PhaseEndDate	4/30/2018	7/6/2018
tblConstructionPhase	PhaseEndDate	4/30/2018	8/3/2018
tblConstructionPhase	PhaseEndDate	4/30/2018	6/25/2018
tblConstructionPhase	PhaseStartDate	5/1/2018	11/25/2018
tblConstructionPhase	PhaseStartDate	5/1/2018	8/4/2018
tblConstructionPhase	PhaseStartDate	5/1/2018	5/26/2018
tblConstructionPhase	PhaseStartDate	5/1/2018	7/7/2018
tblConstructionPhase	PhaseStartDate	5/1/2018	5/29/2018
tblGrading	AcresOfGrading	11.25	2.00
tblGrading	AcresOfGrading	10.00	0.00
tblGrading	MaterialExported	0.00	250.00
tblGrading	MaterialExported	0.00	150.00
tblGrading	MaterialImported	0.00	500.00
tblLandUse	BuildingSpaceSquareFeet	0.00	350.00
tblLandUse	LandUseSquareFeet	348.48	350.00
tblLandUse	LotAcreage	0.54	1.50
tblProjectCharacteristics	OperationalYear	2018	2020

tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	4.1461	42.6330	23.0864	0.0441	39.4471	2.2378	41.6849	8.2883	2.0803	9.9019	0.0000	4,412.8190	4,412.8190	1.0701	0.0000	4,439.5706
Maximum	**4.1461**	**42.6330**	**23.0864**	**0.0441**	**39.4471**	**2.2378**	**41.6849**	**8.2883**	**2.0803**	**9.9019**	**0.0000**	**4,412.8190**	**4,412.8190**	**1.0701**	**0.0000**	**4,439.5706**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	4.1461	42.6330	23.0864	0.0441	10.1136	2.2378	11.8673	5.4540	2.0803	7.0676	0.0000	4,412.8190	4,412.8190	1.0701	0.0000	4,439.5706
Maximum	**4.1461**	**42.6330**	**23.0864**	**0.0441**	**10.1136**	**2.2378**	**11.8673**	**5.4540**	**2.0803**	**7.0676**	**0.0000**	**4,412.8190**	**4,412.8190**	**1.0701**	**0.0000**	**4,439.5706**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	74.36	0.00	71.53	34.20	0.00	28.62	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0142	6.0000e-005	6.3700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0136	0.0136	4.0000e-005		0.0145
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	4.5000e-004	2.5800e-003	4.4500e-003	2.0000e-005	0.0634	2.0000e-005	0.0634	6.4900e-003	2.0000e-005	6.5000e-003		1.6657	1.6657	8.0000e-005		1.6678
Total	**0.0146**	**2.6400e-003**	**0.0108**	**2.0000e-005**	**0.0634**	**4.0000e-005**	**0.0634**	**6.4900e-003**	**4.0000e-005**	**6.5200e-003**		**1.6792**	**1.6792**	**1.2000e-004**	**0.0000**	**1.6822**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0142	6.0000e-005	6.3700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0136	0.0136	4.0000e-005		0.0145
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	4.5000e-004	2.5800e-003	4.4500e-003	2.0000e-005	0.0634	2.0000e-005	0.0634	6.4900e-003	2.0000e-005	6.5000e-003		1.6657	1.6657	8.0000e-005		1.6678
Total	**0.0146**	**2.6400e-003**	**0.0108**	**2.0000e-005**	**0.0634**	**4.0000e-005**	**0.0634**	**6.4900e-003**	**4.0000e-005**	**6.5200e-003**		**1.6792**	**1.6792**	**1.2000e-004**	**0.0000**	**1.6822**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**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**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	11/25/2018	11/30/2018	5	5	
2	Building Construction	Building Construction	8/4/2018	11/24/2018	5	80	
3	Demolition	Demolition	5/1/2018	5/28/2018	5	20	
4	Grading	Grading	5/26/2018	7/6/2018	5	30	
5	Paving	Paving	7/7/2018	8/3/2018	5	20	
6	Site Preparation	Site Preparation	5/29/2018	6/25/2018	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 2

Acres of Paving: 1.55

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 525; Non-Residential Outdoor: 175; Striped Parking Area: 1,560 (Architectural Coating – sqft)

OffRoad Equipment

Knights Landing Boat Launch (Construction Activity) - Yolo/Solano AQMD Air District, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	2.00	0.00	0.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	11.00	4.00	0.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	12.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	94.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	19.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.1425					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.1171
Total	**3.4412**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.1171**

3.2 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0125	7.7500e-003	0.0985	2.6000e-004	2.6706	1.6000e-004	2.6708	0.2701	1.4000e-004	0.2702		25.7286	25.7286	7.7000e-004		25.7479
Total	**0.0125**	**7.7500e-003**	**0.0985**	**2.6000e-004**	**2.6706**	**1.6000e-004**	**2.6708**	**0.2701**	**1.4000e-004**	**0.2702**		**25.7286**	**25.7286**	**7.7000e-004**		**25.7479**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.1425					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.1171
Total	**3.4412**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.1171**

3.2 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0125	7.7500e-003	0.0985	2.6000e-004	0.0216	1.6000e-004	0.0218	5.7600e-003	1.4000e-004	5.9000e-003		25.7286	25.7286	7.7000e-004		25.7479
Total	**0.0125**	**7.7500e-003**	**0.0985**	**2.6000e-004**	**0.0216**	**1.6000e-004**	**0.0218**	**5.7600e-003**	**1.4000e-004**	**5.9000e-003**		**25.7286**	**25.7286**	**7.7000e-004**		**25.7479**

3.3 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5919	17.4280	13.8766	0.0220		1.0580	1.0580		1.0216	1.0216		2,030.8389	2,030.8389	0.4088		2,041.0596
Total	**2.5919**	**17.4280**	**13.8766**	**0.0220**		**1.0580**	**1.0580**		**1.0216**	**1.0216**		**2,030.8389**	**2,030.8389**	**0.4088**		**2,041.0596**

3.3 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0218	0.5686	0.1236	1.4000e-003	3.2108	4.2500e-003	3.2150	0.3265	4.0600e-003	0.3305		146.1249	146.1249	7.8200e-003		146.3204
Worker	0.0686	0.0426	0.5418	1.4200e-003	14.6885	8.6000e-004	14.6894	1.4855	7.9000e-004	1.4863		141.5072	141.5072	4.2400e-003		141.6132
Total	**0.0904**	**0.6113**	**0.6654**	**2.8200e-003**	**17.8993**	**5.1100e-003**	**17.9044**	**1.8120**	**4.8500e-003**	**1.8168**		**287.6321**	**287.6321**	**0.0121**		**287.9336**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5919	17.4280	13.8766	0.0220		1.0580	1.0580		1.0216	1.0216	0.0000	2,030.8389	2,030.8389	0.4088		2,041.0596
Total	**2.5919**	**17.4280**	**13.8766**	**0.0220**		**1.0580**	**1.0580**		**1.0216**	**1.0216**	**0.0000**	**2,030.8389**	**2,030.8389**	**0.4088**		**2,041.0596**

3.3 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0218	0.5686	0.1236	1.4000e-003	0.0319	4.2500e-003	0.0362	9.2500e-003	4.0600e-003	0.0133		146.1249	146.1249	7.8200e-003		146.3204
Worker	0.0686	0.0426	0.5418	1.4200e-003	0.1189	8.6000e-004	0.1198	0.0317	7.9000e-004	0.0325		141.5072	141.5072	4.2400e-003		141.6132
Total	**0.0904**	**0.6113**	**0.6654**	**2.8200e-003**	**0.1509**	**5.1100e-003**	**0.1560**	**0.0409**	**4.8500e-003**	**0.0458**		**287.6321**	**287.6321**	**0.0121**		**287.9336**

3.4 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1504	0.0000	0.1504	0.0228	0.0000	0.0228			0.0000			0.0000
Off-Road	2.4838	24.3641	15.1107	0.0241		1.4365	1.4365		1.3429	1.3429		2,391.1659	2,391.1659	0.6058		2,406.3105
Total	**2.4838**	**24.3641**	**15.1107**	**0.0241**	**0.1504**	**1.4365**	**1.5869**	**0.0228**	**1.3429**	**1.3657**		**2,391.1659**	**2,391.1659**	**0.6058**		**2,406.3105**

3.4 Demolition - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.5100e-003	0.1801	0.0287	5.1000e-004	1.0696	8.0000e-004	1.0704	0.1085	7.6000e-004	0.1093		53.0747	53.0747	2.2100e-003		53.1298
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0810	0.0504	0.6403	1.6800e-003	17.3592	1.0200e-003	17.3602	1.7556	9.4000e-004	1.7566		167.2358	167.2358	5.0100e-003		167.3611
Total	**0.0865**	**0.2305**	**0.6690**	**2.1900e-003**	**18.4288**	**1.8200e-003**	**18.4306**	**1.8641**	**1.7000e-003**	**1.8658**		**220.3105**	**220.3105**	**7.2200e-003**		**220.4909**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1504	0.0000	0.1504	0.0228	0.0000	0.0228			0.0000			0.0000
Off-Road	2.4838	24.3641	15.1107	0.0241		1.4365	1.4365		1.3429	1.3429	0.0000	2,391.1659	2,391.1659	0.6058		2,406.3105
Total	**2.4838**	**24.3641**	**15.1107**	**0.0241**	**0.1504**	**1.4365**	**1.5869**	**0.0228**	**1.3429**	**1.3657**	**0.0000**	**2,391.1659**	**2,391.1659**	**0.6058**		**2,406.3105**

3.4 Demolition - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.5100e-003	0.1801	0.0287	5.1000e-004	0.0100	8.0000e-004	0.0108	2.7600e-003	7.6000e-004	3.5200e-003		53.0747	53.0747	2.2100e-003		53.1298
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0810	0.0504	0.6403	1.6800e-003	0.1405	1.0200e-003	0.1416	0.0374	9.4000e-004	0.0384		167.2358	167.2358	5.0100e-003		167.3611
Total	**0.0865**	**0.2305**	**0.6690**	**2.1900e-003**	**0.1506**	**1.8200e-003**	**0.1524**	**0.0402**	**1.7000e-003**	**0.0419**		**220.3105**	**220.3105**	**7.2200e-003**		**220.4909**

3.5 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.5995	0.0000	4.5995	2.4922	0.0000	2.4922			0.0000			0.0000
Off-Road	1.4972	17.0666	6.7630	0.0141		0.7947	0.7947		0.7311	0.7311		1,421.2605	1,421.2605	0.4425		1,432.3219
Total	**1.4972**	**17.0666**	**6.7630**	**0.0141**	**4.5995**	**0.7947**	**5.3942**	**2.4922**	**0.7311**	**3.2233**		**1,421.2605**	**1,421.2605**	**0.4425**		**1,432.3219**

3.5 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0288	0.9408	0.1496	2.6400e-003	5.5858	4.1700e-003	5.5900	0.5666	3.9900e-003	0.5706		277.1679	277.1679	0.0115		277.4559
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0499	0.0310	0.3940	1.0300e-003	10.6826	6.3000e-004	10.6832	1.0804	5.8000e-004	1.0810		102.9143	102.9143	3.0800e-003		102.9914
Total	**0.0786**	**0.9718**	**0.5437**	**3.6700e-003**	**16.2684**	**4.8000e-003**	**16.2732**	**1.6470**	**4.5700e-003**	**1.6515**		**380.0822**	**380.0822**	**0.0146**		**380.4473**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.5995	0.0000	4.5995	2.4922	0.0000	2.4922			0.0000			0.0000
Off-Road	1.4972	17.0666	6.7630	0.0141		0.7947	0.7947		0.7311	0.7311	0.0000	1,421.2605	1,421.2605	0.4425		1,432.3219
Total	**1.4972**	**17.0666**	**6.7630**	**0.0141**	**4.5995**	**0.7947**	**5.3942**	**2.4922**	**0.7311**	**3.2233**	**0.0000**	**1,421.2605**	**1,421.2605**	**0.4425**		**1,432.3219**

3.5 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0288	0.9408	0.1496	2.6400e-003	0.0523	4.1700e-003	0.0564	0.0144	3.9900e-003	0.0184		277.1679	277.1679	0.0115		277.4559
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0499	0.0310	0.3940	1.0300e-003	0.0865	6.3000e-004	0.0871	0.0230	5.8000e-004	0.0236		102.9143	102.9143	3.0800e-003		102.9914
Total	**0.0786**	**0.9718**	**0.5437**	**3.6700e-003**	**0.1388**	**4.8000e-003**	**0.1436**	**0.0374**	**4.5700e-003**	**0.0420**		**380.0822**	**380.0822**	**0.0146**		**380.4473**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0182	10.4525	8.9926	0.0135		0.6097	0.6097		0.5618	0.5618		1,346.4360	1,346.4360	0.4113		1,356.7186
Paving	0.2031					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2213**	**10.4525**	**8.9926**	**0.0135**		**0.6097**	**0.6097**		**0.5618**	**0.5618**		**1,346.4360**	**1,346.4360**	**0.4113**		**1,356.7186**

3.6 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0810	0.0504	0.6403	1.6800e-003	17.3592	1.0200e-003	17.3602	1.7556	9.4000e-004	1.7566		167.2358	167.2358	5.0100e-003		167.3611
Total	**0.0810**	**0.0504**	**0.6403**	**1.6800e-003**	**17.3592**	**1.0200e-003**	**17.3602**	**1.7556**	**9.4000e-004**	**1.7566**		**167.2358**	**167.2358**	**5.0100e-003**		**167.3611**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0182	10.4525	8.9926	0.0135		0.6097	0.6097		0.5618	0.5618	0.0000	1,346.4360	1,346.4360	0.4113		1,356.7186
Paving	0.2031					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2213**	**10.4525**	**8.9926**	**0.0135**		**0.6097**	**0.6097**		**0.5618**	**0.5618**	**0.0000**	**1,346.4360**	**1,346.4360**	**0.4113**		**1,356.7186**

3.6 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0810	0.0504	0.6403	1.6800e-003	0.1405	1.0200e-003	0.1416	0.0374	9.4000e-004	0.0384		167.2358	167.2358	5.0100e-003		167.3611
Total	**0.0810**	**0.0504**	**0.6403**	**1.6800e-003**	**0.1405**	**1.0200e-003**	**0.1416**	**0.0374**	**9.4000e-004**	**0.0384**		**167.2358**	**167.2358**	**5.0100e-003**		**167.3611**

3.7 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.2730	0.0000	5.2730	2.8970	0.0000	2.8970			0.0000			0.0000
Off-Road	1.8061	20.7472	8.0808	0.0172		0.9523	0.9523		0.8761	0.8761		1,735.3630	1,735.3630	0.5402		1,748.8690
Total	**1.8061**	**20.7472**	**8.0808**	**0.0172**	**5.2730**	**0.9523**	**6.2253**	**2.8970**	**0.8761**	**3.7731**		**1,735.3630**	**1,735.3630**	**0.5402**		**1,748.8690**

3.7 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.7200e-003	0.2852	0.0454	8.0000e-004	1.6936	1.2600e-003	1.6948	0.1718	1.2100e-003	0.1730		84.0350	84.0350	3.4900e-003		84.1223
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0499	0.0310	0.3940	1.0300e-003	10.6826	6.3000e-004	10.6832	1.0804	5.8000e-004	1.0810		102.9143	102.9143	3.0800e-003		102.9914
Total	**0.0586**	**0.3162**	**0.4394**	**1.8300e-003**	**12.3761**	**1.8900e-003**	**12.3780**	**1.2522**	**1.7900e-003**	**1.2540**		**186.9493**	**186.9493**	**6.5700e-003**		**187.1137**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.2730	0.0000	5.2730	2.8970	0.0000	2.8970			0.0000			0.0000
Off-Road	1.8061	20.7472	8.0808	0.0172		0.9523	0.9523		0.8761	0.8761	0.0000	1,735.3630	1,735.3630	0.5402		1,748.8690
Total	**1.8061**	**20.7472**	**8.0808**	**0.0172**	**5.2730**	**0.9523**	**6.2253**	**2.8970**	**0.8761**	**3.7731**	**0.0000**	**1,735.3630**	**1,735.3630**	**0.5402**		**1,748.8690**

3.7 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.7200e-003	0.2852	0.0454	8.0000e-004	0.0159	1.2600e-003	0.0171	4.3600e-003	1.2100e-003	5.5700e-003		84.0350	84.0350	3.4900e-003		84.1223
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0499	0.0310	0.3940	1.0300e-003	0.0865	6.3000e-004	0.0871	0.0230	5.8000e-004	0.0236		102.9143	102.9143	3.0800e-003		102.9914
Total	**0.0586**	**0.3162**	**0.4394**	**1.8300e-003**	**0.1023**	**1.8900e-003**	**0.1042**	**0.0274**	**1.7900e-003**	**0.0292**		**186.9493**	**186.9493**	**6.5700e-003**		**187.1137**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.5000e-004	2.5800e-003	4.4500e-003	2.0000e-005	0.0634	2.0000e-005	0.0634	6.4900e-003	2.0000e-005	6.5000e-003		1.6657	1.6657	8.0000e-005		1.6678
Unmitigated	4.5000e-004	2.5800e-003	4.4500e-003	2.0000e-005	0.0634	2.0000e-005	0.0634	6.4900e-003	2.0000e-005	6.5000e-003		1.6657	1.6657	8.0000e-005		1.6678

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.02	0.18	0.13	156	156
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	0.02	0.18	0.13	156	156

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	15.00	8.00	9.00	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	15.00	8.00	9.00	0.00	0.00	0.00	0	0	0
Parking Lot	15.00	8.00	9.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.516533	0.039972	0.192974	0.121896	0.024730	0.005840	0.032766	0.052716	0.001342	0.002151	0.007335	0.000694	0.001052
Other Asphalt Surfaces	0.516533	0.039972	0.192974	0.121896	0.024730	0.005840	0.032766	0.052716	0.001342	0.002151	0.007335	0.000694	0.001052
City Park	0.516533	0.039972	0.192974	0.121896	0.024730	0.005840	0.032766	0.052716	0.001342	0.002151	0.007335	0.000694	0.001052

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0142	6.0000e-005	6.3700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0136	0.0136	4.0000e-005		0.0145
Unmitigated	0.0142	6.0000e-005	6.3700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0136	0.0136	4.0000e-005		0.0145

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.3000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.2600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.0000e-004	6.0000e-005	6.3700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0136	0.0136	4.0000e-005		0.0145
Total	**0.0142**	**6.0000e-005**	**6.3700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0136**	**0.0136**	**4.0000e-005**		**0.0145**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.3000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.2600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.0000e-004	6.0000e-005	6.3700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0136	0.0136	4.0000e-005		0.0145
Total	**0.0142**	**6.0000e-005**	**6.3700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0136**	**0.0136**	**4.0000e-005**		**0.0145**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Knights Landing Boat Launch (Construction Activity)

Yolo/Solano AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	60.00	Space	1.50	24,000.00	0
Other Asphalt Surfaces	2.00	1000sqft	0.05	2,000.00	0
City Park	0.01	Acre	0.01	350.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	55
Climate Zone	2			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - *

Construction Phase - Information from County

Grading - County Information

Demolition -

Vehicle Trips - Operational Emissions not modeled

Area Mitigation -

Knights Landing Boat Launch (Construction Activity) - Yolo/Solano AQMD Air District, Winter

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	200.00	80.00
tblConstructionPhase	NumDays	4.00	30.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	NumDays	2.00	20.00
tblConstructionPhase	PhaseEndDate	4/30/2018	11/30/2018
tblConstructionPhase	PhaseEndDate	4/30/2018	11/24/2018
tblConstructionPhase	PhaseEndDate	4/30/2018	5/28/2018
tblConstructionPhase	PhaseEndDate	4/30/2018	7/6/2018
tblConstructionPhase	PhaseEndDate	4/30/2018	8/3/2018
tblConstructionPhase	PhaseEndDate	4/30/2018	6/25/2018
tblConstructionPhase	PhaseStartDate	5/1/2018	11/25/2018
tblConstructionPhase	PhaseStartDate	5/1/2018	8/4/2018
tblConstructionPhase	PhaseStartDate	5/1/2018	5/26/2018
tblConstructionPhase	PhaseStartDate	5/1/2018	7/7/2018
tblConstructionPhase	PhaseStartDate	5/1/2018	5/29/2018
tblGrading	AcresOfGrading	11.25	2.00
tblGrading	AcresOfGrading	10.00	0.00
tblGrading	MaterialExported	0.00	250.00
tblGrading	MaterialExported	0.00	150.00
tblGrading	MaterialImported	0.00	500.00
tblLandUse	BuildingSpaceSquareFeet	0.00	350.00
tblLandUse	LandUseSquareFeet	348.48	350.00
tblLandUse	LotAcreage	0.54	1.50
tblProjectCharacteristics	OperationalYear	2018	2020

tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	4.1472	42.6938	22.9783	0.0437	39.4471	2.2379	41.6850	8.2883	2.0804	9.9020	0.0000	4,375.2211	4,375.2211	1.0709	0.0000	4,401.9936
Maximum	**4.1472**	**42.6938**	**22.9783**	**0.0437**	**39.4471**	**2.2379**	**41.6850**	**8.2883**	**2.0804**	**9.9020**	**0.0000**	**4,375.2211**	**4,375.2211**	**1.0709**	**0.0000**	**4,401.9936**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	4.1472	42.6938	22.9783	0.0437	10.1136	2.2379	11.8674	5.4540	2.0804	7.0677	0.0000	4,375.2211	4,375.2211	1.0709	0.0000	4,401.9936
Maximum	**4.1472**	**42.6938**	**22.9783**	**0.0437**	**10.1136**	**2.2379**	**11.8674**	**5.4540**	**2.0804**	**7.0677**	**0.0000**	**4,375.2211**	**4,375.2211**	**1.0709**	**0.0000**	**4,401.9936**

Knights Landing Boat Launch (Construction Activity) - Yolo/Solano AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**74.36**	**0.00**	**71.53**	**34.20**	**0.00**	**28.62**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0142	6.0000e-005	6.3700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0136	0.0136	4.0000e-005		0.0145
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	3.7000e-004	2.7100e-003	4.3400e-003	2.0000e-005	0.0634	2.0000e-005	0.0634	6.4900e-003	2.0000e-005	6.5000e-003		1.5310	1.5310	9.0000e-005		1.5332
Total	**0.0145**	**2.7700e-003**	**0.0107**	**2.0000e-005**	**0.0634**	**4.0000e-005**	**0.0634**	**6.4900e-003**	**4.0000e-005**	**6.5200e-003**		**1.5446**	**1.5446**	**1.3000e-004**	**0.0000**	**1.5476**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0142	6.0000e-005	6.3700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0136	0.0136	4.0000e-005		0.0145
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	3.7000e-004	2.7100e-003	4.3400e-003	2.0000e-005	0.0634	2.0000e-005	0.0634	6.4900e-003	2.0000e-005	6.5000e-003		1.5310	1.5310	9.0000e-005		1.5332
Total	**0.0145**	**2.7700e-003**	**0.0107**	**2.0000e-005**	**0.0634**	**4.0000e-005**	**0.0634**	**6.4900e-003**	**4.0000e-005**	**6.5200e-003**		**1.5446**	**1.5446**	**1.3000e-004**	**0.0000**	**1.5476**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**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**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	11/25/2018	11/30/2018	5	5	
2	Building Construction	Building Construction	8/4/2018	11/24/2018	5	80	
3	Demolition	Demolition	5/1/2018	5/28/2018	5	20	
4	Grading	Grading	5/26/2018	7/6/2018	5	30	
5	Paving	Paving	7/7/2018	8/3/2018	5	20	
6	Site Preparation	Site Preparation	5/29/2018	6/25/2018	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 2

Acres of Paving: 1.55

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 525; Non-Residential Outdoor: 175; Striped Parking Area: 1,560 (Architectural Coating – sqft)

OffRoad Equipment

Knights Landing Boat Launch (Construction Activity) - Yolo/Solano AQMD Air District, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	2.00	0.00	0.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	11.00	4.00	0.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	12.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	94.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	19.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.1425					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.1171
Total	**3.4412**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.1171**

3.2 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0124	9.7800e-003	0.0859	2.3000e-004	2.6706	1.6000e-004	2.6708	0.2701	1.4000e-004	0.2702		22.8328	22.8328	6.9000e-004		22.8499
Total	**0.0124**	**9.7800e-003**	**0.0859**	**2.3000e-004**	**2.6706**	**1.6000e-004**	**2.6708**	**0.2701**	**1.4000e-004**	**0.2702**		**22.8328**	**22.8328**	**6.9000e-004**		**22.8499**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.1425					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.1171
Total	**3.4412**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.1171**

3.2 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0124	9.7800e-003	0.0859	2.3000e-004	0.0216	1.6000e-004	0.0218	5.7600e-003	1.4000e-004	5.9000e-003		22.8328	22.8328	6.9000e-004		22.8499
Total	**0.0124**	**9.7800e-003**	**0.0859**	**2.3000e-004**	**0.0216**	**1.6000e-004**	**0.0218**	**5.7600e-003**	**1.4000e-004**	**5.9000e-003**		**22.8328**	**22.8328**	**6.9000e-004**		**22.8499**

3.3 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5919	17.4280	13.8766	0.0220		1.0580	1.0580		1.0216	1.0216		2,030.8389	2,030.8389	0.4088		2,041.0596
Total	**2.5919**	**17.4280**	**13.8766**	**0.0220**		**1.0580**	**1.0580**		**1.0216**	**1.0216**		**2,030.8389**	**2,030.8389**	**0.4088**		**2,041.0596**

3.3 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0228	0.5825	0.1444	1.3600e-003	3.2108	4.3300e-003	3.2151	0.3265	4.1400e-003	0.3306		142.1590	142.1590	8.8000e-003		142.3791
Worker	0.0684	0.0538	0.4725	1.2600e-003	14.6885	8.6000e-004	14.6894	1.4855	7.9000e-004	1.4863		125.5802	125.5802	3.7800e-003		125.6746
Total	**0.0912**	**0.6363**	**0.6169**	**2.6200e-003**	**17.8993**	**5.1900e-003**	**17.9045**	**1.8120**	**4.9300e-003**	**1.8169**		**267.7392**	**267.7392**	**0.0126**		**268.0536**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5919	17.4280	13.8766	0.0220		1.0580	1.0580		1.0216	1.0216	0.0000	2,030.8389	2,030.8389	0.4088		2,041.0596
Total	**2.5919**	**17.4280**	**13.8766**	**0.0220**		**1.0580**	**1.0580**		**1.0216**	**1.0216**	**0.0000**	**2,030.8389**	**2,030.8389**	**0.4088**		**2,041.0596**

3.3 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0228	0.5825	0.1444	1.3600e-003	0.0319	4.3300e-003	0.0363	9.2500e-003	4.1400e-003	0.0134		142.1590	142.1590	8.8000e-003		142.3791
Worker	0.0684	0.0538	0.4725	1.2600e-003	0.1189	8.6000e-004	0.1198	0.0317	7.9000e-004	0.0325		125.5802	125.5802	3.7800e-003		125.6746
Total	**0.0912**	**0.6363**	**0.6169**	**2.6200e-003**	**0.1509**	**5.1900e-003**	**0.1560**	**0.0409**	**4.9300e-003**	**0.0459**		**267.7392**	**267.7392**	**0.0126**		**268.0536**

3.4 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1504	0.0000	0.1504	0.0228	0.0000	0.0228			0.0000			0.0000
Off-Road	2.4838	24.3641	15.1107	0.0241		1.4365	1.4365		1.3429	1.3429		2,391.1659	2,391.1659	0.6058		2,406.3105
Total	**2.4838**	**24.3641**	**15.1107**	**0.0241**	**0.1504**	**1.4365**	**1.5869**	**0.0228**	**1.3429**	**1.3657**		**2,391.1659**	**2,391.1659**	**0.6058**		**2,406.3105**

3.4 Demolition - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.7200e-003	0.1865	0.0326	5.0000e-004	1.0696	8.2000e-004	1.0704	0.1085	7.8000e-004	0.1093		51.9189	51.9189	2.4800e-003		51.9809
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0809	0.0636	0.5584	1.4900e-003	17.3592	1.0200e-003	17.3602	1.7556	9.4000e-004	1.7566		148.4130	148.4130	4.4600e-003		148.5245
Total	**0.0866**	**0.2501**	**0.5909**	**1.9900e-003**	**18.4288**	**1.8400e-003**	**18.4306**	**1.8641**	**1.7200e-003**	**1.8658**		**200.3318**	**200.3318**	**6.9400e-003**		**200.5055**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1504	0.0000	0.1504	0.0228	0.0000	0.0228			0.0000			0.0000
Off-Road	2.4838	24.3641	15.1107	0.0241		1.4365	1.4365		1.3429	1.3429	0.0000	2,391.1659	2,391.1659	0.6058		2,406.3105
Total	**2.4838**	**24.3641**	**15.1107**	**0.0241**	**0.1504**	**1.4365**	**1.5869**	**0.0228**	**1.3429**	**1.3657**	**0.0000**	**2,391.1659**	**2,391.1659**	**0.6058**		**2,406.3105**

3.4 Demolition - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.7200e-003	0.1865	0.0326	5.0000e-004	0.0100	8.2000e-004	0.0108	2.7600e-003	7.8000e-004	3.5400e-003		51.9189	51.9189	2.4800e-003		51.9809
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0809	0.0636	0.5584	1.4900e-003	0.1405	1.0200e-003	0.1416	0.0374	9.4000e-004	0.0384		148.4130	148.4130	4.4600e-003		148.5245
Total	**0.0866**	**0.2501**	**0.5909**	**1.9900e-003**	**0.1506**	**1.8400e-003**	**0.1524**	**0.0402**	**1.7200e-003**	**0.0419**		**200.3318**	**200.3318**	**6.9400e-003**		**200.5055**

3.5 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.5995	0.0000	4.5995	2.4922	0.0000	2.4922			0.0000			0.0000
Off-Road	1.4972	17.0666	6.7630	0.0141		0.7947	0.7947		0.7311	0.7311		1,421.2605	1,421.2605	0.4425		1,432.3219
Total	**1.4972**	**17.0666**	**6.7630**	**0.0141**	**4.5995**	**0.7947**	**5.3942**	**2.4922**	**0.7311**	**3.2233**		**1,421.2605**	**1,421.2605**	**0.4425**		**1,432.3219**

3.5 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0299	0.9739	0.1701	2.5900e-003	5.5858	4.2800e-003	5.5901	0.5666	4.0900e-003	0.5707		271.1318	271.1318	0.0130		271.4560
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0498	0.0391	0.3436	9.2000e-004	10.6826	6.3000e-004	10.6832	1.0804	5.8000e-004	1.0810		91.3311	91.3311	2.7500e-003		91.3997
Total	**0.0796**	**1.0131**	**0.5137**	**3.5100e-003**	**16.2684**	**4.9100e-003**	**16.2733**	**1.6470**	**4.6700e-003**	**1.6516**		**362.4629**	**362.4629**	**0.0157**		**362.8557**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.5995	0.0000	4.5995	2.4922	0.0000	2.4922			0.0000			0.0000
Off-Road	1.4972	17.0666	6.7630	0.0141		0.7947	0.7947		0.7311	0.7311	0.0000	1,421.2605	1,421.2605	0.4425		1,432.3219
Total	**1.4972**	**17.0666**	**6.7630**	**0.0141**	**4.5995**	**0.7947**	**5.3942**	**2.4922**	**0.7311**	**3.2233**	**0.0000**	**1,421.2605**	**1,421.2605**	**0.4425**		**1,432.3219**

3.5 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0299	0.9739	0.1701	2.5900e-003	0.0523	4.2800e-003	0.0566	0.0144	4.0900e-003	0.0185		271.1318	271.1318	0.0130		271.4560
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0498	0.0391	0.3436	9.2000e-004	0.0865	6.3000e-004	0.0871	0.0230	5.8000e-004	0.0236		91.3311	91.3311	2.7500e-003		91.3997
Total	**0.0796**	**1.0131**	**0.5137**	**3.5100e-003**	**0.1388**	**4.9100e-003**	**0.1437**	**0.0374**	**4.6700e-003**	**0.0421**		**362.4629**	**362.4629**	**0.0157**		**362.8557**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0182	10.4525	8.9926	0.0135		0.6097	0.6097		0.5618	0.5618		1,346.4360	1,346.4360	0.4113		1,356.7186
Paving	0.2031					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2213**	**10.4525**	**8.9926**	**0.0135**		**0.6097**	**0.6097**		**0.5618**	**0.5618**		**1,346.4360**	**1,346.4360**	**0.4113**		**1,356.7186**

3.6 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0809	0.0636	0.5584	1.4900e-003	17.3592	1.0200e-003	17.3602	1.7556	9.4000e-004	1.7566		148.4130	148.4130	4.4600e-003		148.5245
Total	**0.0809**	**0.0636**	**0.5584**	**1.4900e-003**	**17.3592**	**1.0200e-003**	**17.3602**	**1.7556**	**9.4000e-004**	**1.7566**		**148.4130**	**148.4130**	**4.4600e-003**		**148.5245**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0182	10.4525	8.9926	0.0135		0.6097	0.6097		0.5618	0.5618	0.0000	1,346.4360	1,346.4360	0.4113		1,356.7186
Paving	0.2031					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2213**	**10.4525**	**8.9926**	**0.0135**		**0.6097**	**0.6097**		**0.5618**	**0.5618**	**0.0000**	**1,346.4360**	**1,346.4360**	**0.4113**		**1,356.7186**

3.6 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0809	0.0636	0.5584	1.4900e-003	0.1405	1.0200e-003	0.1416	0.0374	9.4000e-004	0.0384		148.4130	148.4130	4.4600e-003		148.5245
Total	**0.0809**	**0.0636**	**0.5584**	**1.4900e-003**	**0.1405**	**1.0200e-003**	**0.1416**	**0.0374**	**9.4000e-004**	**0.0384**		**148.4130**	**148.4130**	**4.4600e-003**		**148.5245**

3.7 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.2730	0.0000	5.2730	2.8970	0.0000	2.8970			0.0000			0.0000
Off-Road	1.8061	20.7472	8.0808	0.0172		0.9523	0.9523		0.8761	0.8761		1,735.3630	1,735.3630	0.5402		1,748.8690
Total	**1.8061**	**20.7472**	**8.0808**	**0.0172**	**5.2730**	**0.9523**	**6.2253**	**2.8970**	**0.8761**	**3.7731**		**1,735.3630**	**1,735.3630**	**0.5402**		**1,748.8690**

3.7 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.0600e-003	0.2953	0.0516	7.8000e-004	1.6936	1.3000e-003	1.6949	0.1718	1.2400e-003	0.1730		82.2049	82.2049	3.9300e-003		82.3032
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0498	0.0391	0.3436	9.2000e-004	10.6826	6.3000e-004	10.6832	1.0804	5.8000e-004	1.0810		91.3311	91.3311	2.7500e-003		91.3997
Total	**0.0588**	**0.3344**	**0.3952**	**1.7000e-003**	**12.3761**	**1.9300e-003**	**12.3781**	**1.2522**	**1.8200e-003**	**1.2540**		**173.5359**	**173.5359**	**6.6800e-003**		**173.7029**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.2730	0.0000	5.2730	2.8970	0.0000	2.8970			0.0000			0.0000
Off-Road	1.8061	20.7472	8.0808	0.0172		0.9523	0.9523		0.8761	0.8761	0.0000	1,735.3630	1,735.3630	0.5402		1,748.8690
Total	**1.8061**	**20.7472**	**8.0808**	**0.0172**	**5.2730**	**0.9523**	**6.2253**	**2.8970**	**0.8761**	**3.7731**	**0.0000**	**1,735.3630**	**1,735.3630**	**0.5402**		**1,748.8690**

3.7 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	9.0600e-003	0.2953	0.0516	7.8000e-004	0.0159	1.3000e-003	0.0172	4.3600e-003	1.2400e-003	5.6100e-003		82.2049	82.2049	3.9300e-003		82.3032
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0498	0.0391	0.3436	9.2000e-004	0.0865	6.3000e-004	0.0871	0.0230	5.8000e-004	0.0236		91.3311	91.3311	2.7500e-003		91.3997
Total	**0.0588**	**0.3344**	**0.3952**	**1.7000e-003**	**0.1023**	**1.9300e-003**	**0.1043**	**0.0274**	**1.8200e-003**	**0.0292**		**173.5359**	**173.5359**	**6.6800e-003**		**173.7029**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.7000e-004	2.7100e-003	4.3400e-003	2.0000e-005	0.0634	2.0000e-005	0.0634	6.4900e-003	2.0000e-005	6.5000e-003		1.5310	1.5310	9.0000e-005		1.5332
Unmitigated	3.7000e-004	2.7100e-003	4.3400e-003	2.0000e-005	0.0634	2.0000e-005	0.0634	6.4900e-003	2.0000e-005	6.5000e-003		1.5310	1.5310	9.0000e-005		1.5332

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.02	0.18	0.13	156	156
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	0.02	0.18	0.13	156	156

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	15.00	8.00	9.00	33.00	48.00	19.00	66	28	6
Other Asphalt Surfaces	15.00	8.00	9.00	0.00	0.00	0.00	0	0	0
Parking Lot	15.00	8.00	9.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.516533	0.039972	0.192974	0.121896	0.024730	0.005840	0.032766	0.052716	0.001342	0.002151	0.007335	0.000694	0.001052
Other Asphalt Surfaces	0.516533	0.039972	0.192974	0.121896	0.024730	0.005840	0.032766	0.052716	0.001342	0.002151	0.007335	0.000694	0.001052
City Park	0.516533	0.039972	0.192974	0.121896	0.024730	0.005840	0.032766	0.052716	0.001342	0.002151	0.007335	0.000694	0.001052

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0142	6.0000e-005	6.3700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0136	0.0136	4.0000e-005		0.0145
Unmitigated	0.0142	6.0000e-005	6.3700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0136	0.0136	4.0000e-005		0.0145

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.3000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.2600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.0000e-004	6.0000e-005	6.3700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0136	0.0136	4.0000e-005		0.0145
Total	**0.0142**	**6.0000e-005**	**6.3700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0136**	**0.0136**	**4.0000e-005**		**0.0145**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.3000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.2600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.0000e-004	6.0000e-005	6.3700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0136	0.0136	4.0000e-005		0.0145
Total	**0.0142**	**6.0000e-005**	**6.3700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0136**	**0.0136**	**4.0000e-005**		**0.0145**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Knights Landing Boat Launch (Construction Activity)

Yolo/Solano AQMD Air District, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demolition	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	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
Site Preparation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	No Change	0	1	No Change	0.00
Cement and Mortar Mixers	Diesel	No Change	0	1	No Change	0.00
Concrete/Industrial Saws	Diesel	No Change	0	1	No Change	0.00
Cranes	Diesel	No Change	0	1	No Change	0.00
Forklifts	Diesel	No Change	0	1	No Change	0.00
Graders	Diesel	No Change	0	2	No Change	0.00
Pavers	Diesel	No Change	0	1	No Change	0.00
Rollers	Diesel	No Change	0	1	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	3	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	7	No Change	0.00
Generator Sets	Diesel	No Change	0	1	No Change	0.00
Paving Equipment	Diesel	No Change	0	1	No Change	0.00
Welders	Diesel	No Change	0	3	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Air Compressors	7.50000E-004	5.01000E-003	4.64000E-003	1.00000E-005	3.80000E-004	3.80000E-004	0.00000E+000	6.38310E-001	6.38310E-001	6.00000E-005	0.00000E+000	6.39830E-001
Cement and Mortar Mixers	4.40000E-004	2.76000E-003	2.31000E-003	1.00000E-005	1.10000E-004	1.10000E-004	0.00000E+000	3.43710E-001	3.43710E-001	4.00000E-005	0.00000E+000	3.44600E-001
Concrete/Industrial Saws	5.19000E-003	3.91500E-002	3.72400E-002	6.00000E-005	2.67000E-003	2.67000E-003	0.00000E+000	5.37656E+000	5.37656E+000	4.20000E-004	0.00000E+000	5.38697E+000
Cranes	1.71200E-002	2.04620E-001	7.56600E-002	1.70000E-004	8.86000E-003	8.15000E-003	0.00000E+000	1.58013E+001	1.58013E+001	4.92000E-003	0.00000E+000	1.59243E+001
Forklifts	5.34000E-003	4.72300E-002	3.63400E-002	5.00000E-005	3.77000E-003	3.47000E-003	0.00000E+000	4.18541E+000	4.18541E+000	1.30000E-003	0.00000E+000	4.21799E+000
Generator Sets	2.02200E-002	1.64530E-001	1.49890E-001	2.60000E-004	1.04800E-002	1.04800E-002	0.00000E+000	2.26083E+001	2.26083E+001	1.63000E-003	0.00000E+000	2.26491E+001
Graders	1.10400E-002	1.51460E-001	4.06900E-002	1.40000E-004	4.92000E-003	4.53000E-003	0.00000E+000	1.29148E+001	1.29148E+001	4.02000E-003	0.00000E+000	1.30153E+001
Pavers	2.45000E-003	2.70600E-002	2.19500E-002	4.00000E-005	1.32000E-003	1.22000E-003	0.00000E+000	3.21914E+000	3.21914E+000	1.00000E-003	0.00000E+000	3.24420E+000
Paving Equipment	2.38000E-003	2.65900E-002	2.53600E-002	4.00000E-005	1.30000E-003	1.20000E-003	0.00000E+000	3.71950E+000	3.71950E+000	1.16000E-003	0.00000E+000	3.74845E+000
Rollers	2.26000E-003	2.18200E-002	1.69400E-002	2.00000E-005	1.50000E-003	1.38000E-003	0.00000E+000	2.09485E+000	2.09485E+000	6.50000E-004	0.00000E+000	2.11116E+000
Rubber Tired Dozers	3.49800E-002	3.76800E-001	1.31290E-001	2.60000E-004	1.83200E-002	1.68500E-002	0.00000E+000	2.34101E+001	2.34101E+001	7.29000E-003	0.00000E+000	2.35923E+001
Tractors/Loaders/Backhoes	2.47800E-002	2.44890E-001	2.17610E-001	2.90000E-004	1.73500E-002	1.59600E-002	0.00000E+000	2.64238E+001	2.64238E+001	8.23000E-003	0.00000E+000	2.66295E+001
Welders	5.30100E-002	2.01830E-001	2.23080E-001	3.10000E-004	1.36200E-002	1.36200E-002	0.00000E+000	2.25865E+001	2.25865E+001	4.33000E-003	0.00000E+000	2.26948E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	7.50000E-004	5.01000E-003	4.64000E-003	1.00000E-005	3.80000E-004	3.80000E-004	0.00000E+000	6.38310E-001	6.38310E-001	6.00000E-005	0.00000E+000	6.39830E-001
Cement and Mortar Mixers	4.40000E-004	2.76000E-003	2.31000E-003	1.00000E-005	1.10000E-004	1.10000E-004	0.00000E+000	3.43710E-001	3.43710E-001	4.00000E-005	0.00000E+000	3.44600E-001
Concrete/Industrial Saws	5.19000E-003	3.91500E-002	3.72400E-002	6.00000E-005	2.67000E-003	2.67000E-003	0.00000E+000	5.37656E+000	5.37656E+000	4.20000E-004	0.00000E+000	5.38696E+000
Cranes	1.71200E-002	2.04620E-001	7.56600E-002	1.70000E-004	8.86000E-003	8.15000E-003	0.00000E+000	1.58013E+001	1.58013E+001	4.92000E-003	0.00000E+000	1.59243E+001
Forklifts	5.34000E-003	4.72300E-002	3.63400E-002	5.00000E-005	3.77000E-003	3.47000E-003	0.00000E+000	4.18541E+000	4.18541E+000	1.30000E-003	0.00000E+000	4.21798E+000
Generator Sets	2.02200E-002	1.64530E-001	1.49890E-001	2.60000E-004	1.04800E-002	1.04800E-002	0.00000E+000	2.26083E+001	2.26083E+001	1.63000E-003	0.00000E+000	2.26491E+001
Graders	1.10400E-002	1.51460E-001	4.06900E-002	1.40000E-004	4.92000E-003	4.53000E-003	0.00000E+000	1.29148E+001	1.29148E+001	4.02000E-003	0.00000E+000	1.30153E+001
Pavers	2.45000E-003	2.70600E-002	2.19500E-002	4.00000E-005	1.32000E-003	1.22000E-003	0.00000E+000	3.21914E+000	3.21914E+000	1.00000E-003	0.00000E+000	3.24419E+000
Paving Equipment	2.38000E-003	2.65900E-002	2.53600E-002	4.00000E-005	1.30000E-003	1.20000E-003	0.00000E+000	3.71950E+000	3.71950E+000	1.16000E-003	0.00000E+000	3.74845E+000
Rollers	2.26000E-003	2.18200E-002	1.69400E-002	2.00000E-005	1.50000E-003	1.38000E-003	0.00000E+000	2.09485E+000	2.09485E+000	6.50000E-004	0.00000E+000	2.11115E+000
Rubber Tired Dozers	3.49800E-002	3.76800E-001	1.31290E-001	2.60000E-004	1.83200E-002	1.68500E-002	0.00000E+000	2.34101E+001	2.34101E+001	7.29000E-003	0.00000E+000	2.35923E+001
Tractors/Loaders/Backhoes	2.47800E-002	2.44890E-001	2.17610E-001	2.90000E-004	1.73500E-002	1.59600E-002	0.00000E+000	2.64238E+001	2.64238E+001	8.23000E-003	0.00000E+000	2.66294E+001
Welders	5.30100E-002	2.01830E-001	2.23080E-001	3.10000E-004	1.36200E-002	1.36200E-002	0.00000E+000	2.25865E+001	2.25865E+001	4.33000E-003	0.00000E+000	2.26948E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Cement and Mortar Mixers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Concrete/Industrial Saws	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.85633E-006
Cranes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.26572E-006	1.26572E-006	0.00000E+000	0.00000E+000	1.25594E-006
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	2.37080E-006
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.32695E-006	1.32695E-006	0.00000E+000	0.00000E+000	1.32456E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.54861E-006	1.54861E-006	0.00000E+000	0.00000E+000	1.53665E-006
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	3.08242E-006
Paving Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	4.73673E-006
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	8.54333E-007	8.54333E-007	0.00000E+000	0.00000E+000	1.27160E-006
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.13534E-006	1.13534E-006	0.00000E+000	0.00000E+000	1.12657E-006
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.32823E-006	1.32823E-006	0.00000E+000	0.00000E+000	1.32189E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction		PM2.5 Reduction			
No	Replace Ground Cover of Area Disturbed	PM10 Reduction		PM2.5 Reduction			
No	Water Exposed Area	PM10 Reduction		PM2.5 Reduction		Frequency (per day)	

No	Unpaved Road Mitigation	Moisture Content %		Vehicle Speed (mph)			
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.01	0.00	0.00	0.00	0.99	0.98
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.61	0.06	0.01	0.00	0.99	0.97
Demolition	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Demolition	Roads	0.16	0.02	0.00	0.00	0.99	0.98
Grading	Fugitive Dust	0.07	0.04	0.07	0.04	0.00	0.00
Grading	Roads	0.21	0.02	0.00	0.00	0.99	0.97
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.15	0.01	0.00	0.00	0.99	0.98
Site Preparation	Fugitive Dust	0.05	0.03	0.05	0.03	0.00	0.00
Site Preparation	Roads	0.11	0.01	0.00	0.00	0.99	0.98

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.01	0.16		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"				
No	Commute	Workplace Parking Charge				
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program				
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
Yes	Use Low VOC Paint (Residential Interior)	100.00
Yes	Use Low VOC Paint (Residential Exterior)	100.00
Yes	Use Low VOC Paint (Non-residential Interior)	150.00
Yes	Use Low VOC Paint (Non-residential Exterior)	150.00
Yes	Use Low VOC Paint (Parking)	150.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy		
No	Use Reclaimed Water		
No	Use Grey Water		
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction		
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape		

Solid Waste Mitigation

Mitigation Measures	Input Value

Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

APPENDIX B

SELF-PAY STATION ENERGY CONSUMPTION AND GHG EMISSIONS ESTIMATION

Pay Station

PG&E GHG Emission (lbs CO2 per Mwh)	PG&E GHG Emissions (lbs CO2 per kWh)	Parking meter annual energy consumption (kWhr/yr)	Emissions related to parking meter (lbs CO2/yr)	Emissions related to parking meter (Metric tons CO2/yr)
435	0.435	1000	435	0.19731252