2017 STORM DAMAGE DWR REHABILITATION – PHASE 4 AND 5 REPAIR SITES

Initial Study/Mitigated Negative Declaration

Prepared for
California Department of Water Resources

April 2019

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California Department of Water Resources
Division of Flood Management
3310 El Camino Ave
Sacramento, CA 95821
Contact: Kristin Ford, Flood Maintenance Office
(916) 574-0368

April 2019

2600 Capitol Avenue
Suite 200
Sacramento, CA 95816
916.564.4500
www.esassoc.com
Contact: Erick Cooke

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CHAPTER 1
Introduction

High flow conditions occurring during the winter of 2016/2017 resulted in erosion and other damage at numerous levees managed by the California Department of Water Resources (DWR) or other local maintaining agencies (LMAs), such as Reclamation Districts, Levee Districts, etc. Therefore, a rehabilitation program was required to make much needed repairs prior to the 2017/2018 winter season. In response, DWR implemented the 2017 Storm Damage DWR Rehabilitation Program at several emergency repair sites. DWR repaired emergency sites during fall of 2017 (Phases 1 and 2) and summer of 2018 (Phase 3). In addition, non-emergency repair sites (Phase 4 and 5) have been identified for repair during summer-fall of 2019 or 2020, and are presented herein as the proposed project. The State Plan of Flood Control (SPFC) levees at multiple sites are damaged to such an extent that the flood control performance has been compromised, presenting a potential to public safety risk, which could result in flooding, property damage, and loss of life within the protected area during the next high water event. The proposed project for this CEQA document is Phases 4 and 5.

CHAPTER 2
Project Description

2.1 Introduction

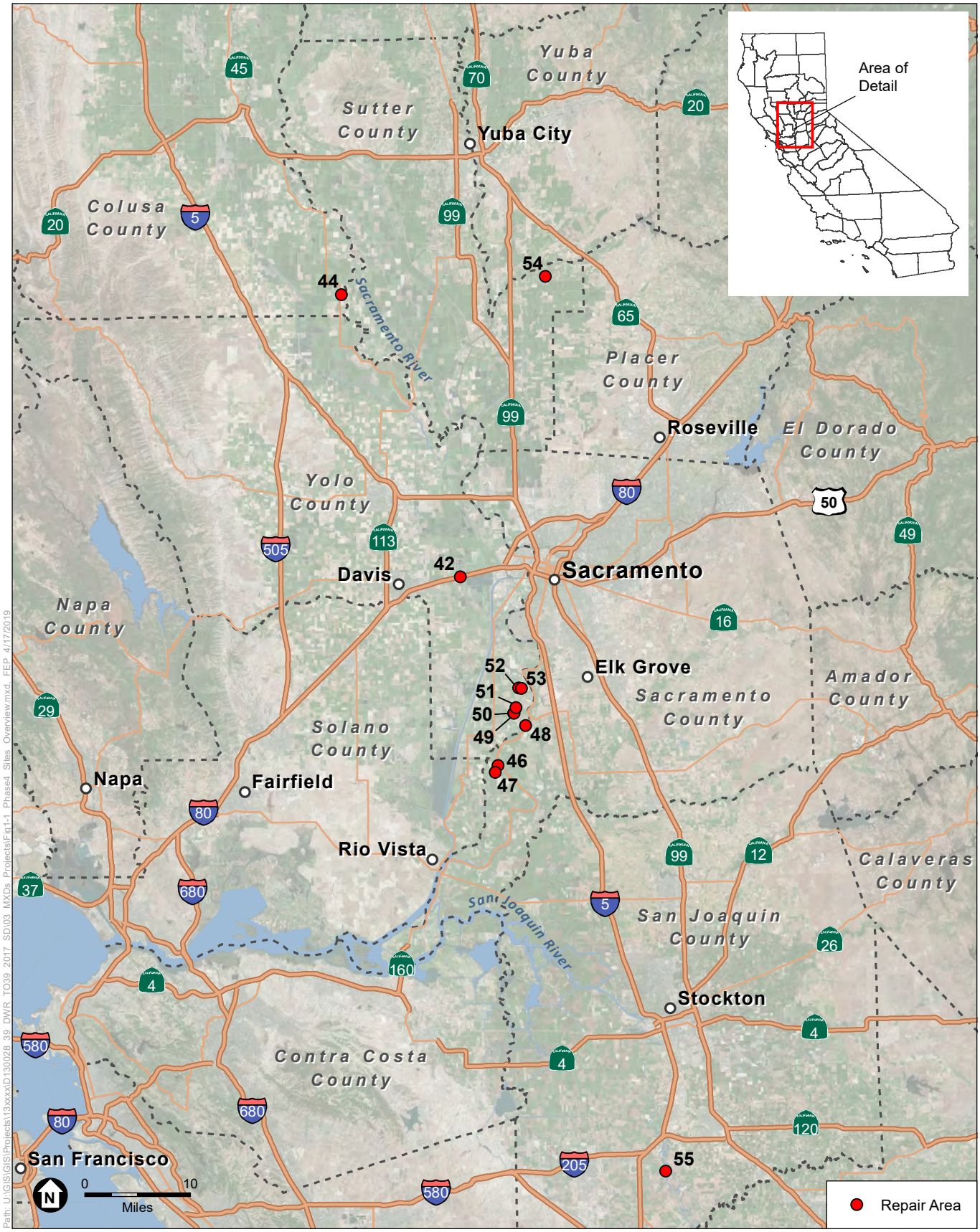
DWR implemented the 2017 Storm Damage DWR Emergency Rehabilitation Program for emergency repair sites in Phases 1 through 3 in 2017 and 2018. The purposed of the proposed project is to address additional non-emergency sites (Phases 4 and 5) identified for repair in 2019/2020. The previous emergency repairs under Phases 1 through 3 did not require CEQA because those sites met the Statutory Exemption under Section 15269 criteria for emergency projects that are necessary to maintain levee structures essential to public health, safety and welfare due to the high potential for levee failures without the repairs during the 2017/2018 phases. DWR's Division of Flood Management, Flood Maintenance Office is the CEQA Lead Agency for the proposed project. The description of the proposed project, including a description of the general construction approach for all proposed repair sites, is presented below. For the purposes of this Initial Study (IS), the term 'repair site' shall include access roads, laydown areas for construction equipment and materials, and the levee site itself.

2.2 Project Location

The proposed project includes a total of 29 sites located in Yolo, Sutter, Tehama, Butte, Colusa, Glenn, San Joaquin, and Sacramento counties as listed by phase in **Table 2-1** and as shown on **Figures 1a and 1b**.

TABLE 2-1
PHASE 4 AND PHASE 5 REPAIR SITE DETAILS

Phase	Site No	LMA Full Name	Start Latitude	Start Longitude	Start Levee Mile
4	42	West Levee Yolo Bypass	38.56328942	-121.6383671	0.77
	44	Sacramento River West Side Levee District	38.95405988	-121.8405597	18.76
	46	RD3 - Grand Island	38.302981	-121.577336	0.18
	47	RD3 - Grand Island	38.293381	-121.58245	0.91
	48	RD150 - Merrit Island	38.357183	-121.528547	3.42
	49	RD150 - Merrit Island	38.37427778	-121.5491667	4.39
	50	RD150 - Merrit Island	38.37431389	-121.5477528	4.47
	51	RD150 - Merrit Island	38.38216944	-121.5445972	5.4
	52	RD150 - Merrit Island	38.40922778	-121.5393889	8.05
	53	RD150 - Merrit Island	38.40798333	-121.5343222	8.35
	54	RD1001 - Nicolaus	38.975019	-121.481066	0.74
	55	RD2095 - Paradise Cut	37.740196	-121.297662	1.75
5	58	RD755 - Randall	38.33775833	-121.5638556	1.73
	59	RD551 - Pearson	38.27459167	-121.5389583	5.2
	60	RD551 - Pearson	38.26443611	-121.5254722	6.22
	61	RD999 - Netherlands	38.41531944	-121.5237167	0.1
	62	RD524 - Middle Robert's Island	37.8922	-121.328	4.53
	63	RD307 - Lisbon	38.43165	-121.533367	6.47
	65	RD307 - Lisbon	38.430958	-121.533364	6.48
	67	RD307 - Lisbon	38.430447	-121.533336	6.51
	69	RD524 - Middle Robert's Island	37.9319	-121.3284	1.3
	70	RD524 - Middle Robert's Island	37.9353	-121.3332	0.91
	71	RD544 - Upper Robert's Island	37.8203	-121.3457	2.18
	72	RD544 - Upper Robert's Island	37.8135	-121.3194	5.36
	73	RD544 - Upper Robert's Island	37.8184	-121.319	4.99
	74	RD544 - Upper Robert's Island	37.8294	-121.312	3.82
	77	RD563 - Tyler Island	38.15082034	-121.5936503	9.73
	76	Tehama County Flood Control and Water Conservation District	40.05159551	-122.1641788	1.43
	79	Maintenance Area 5	39.676298	-121.778272	1.6

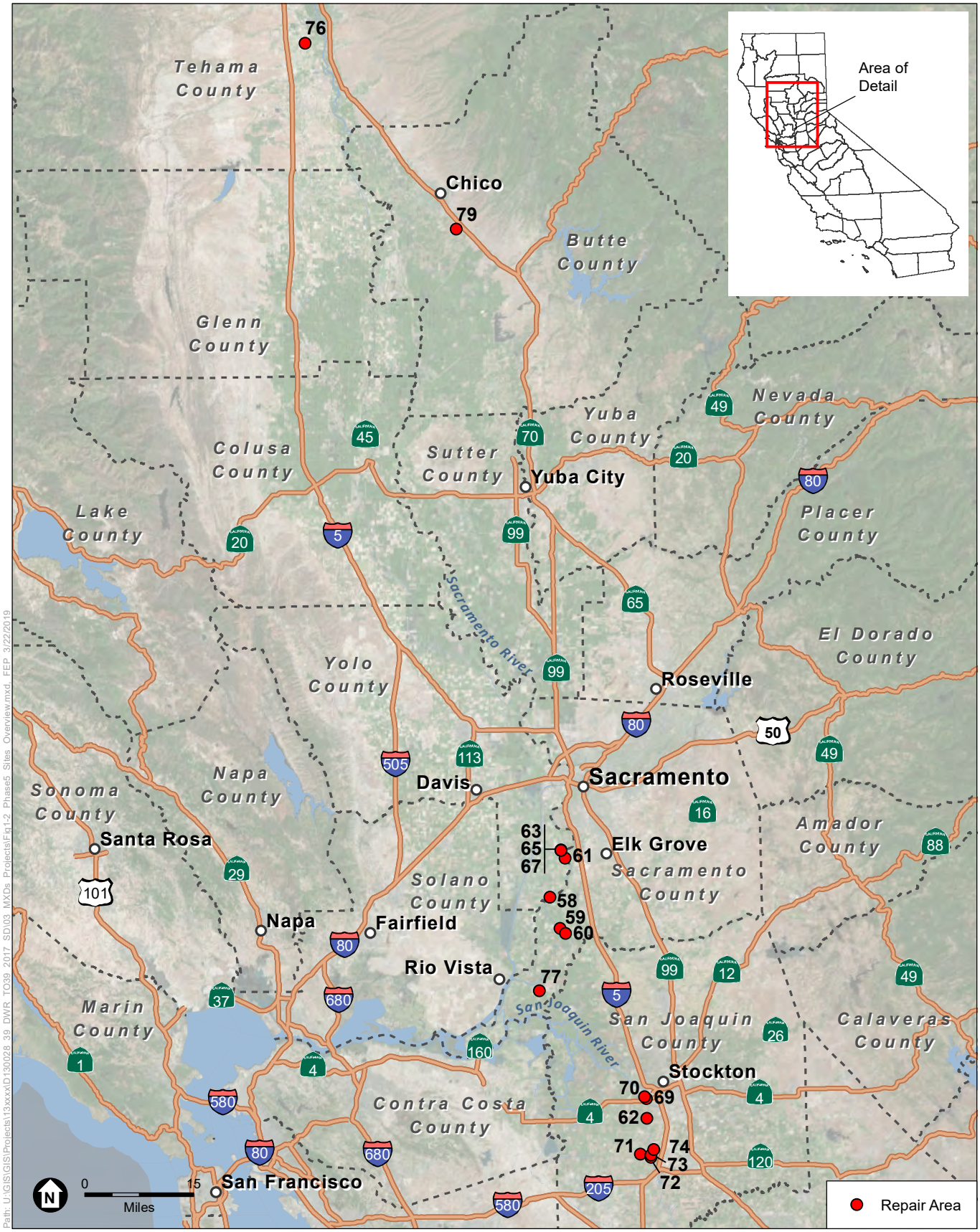


SOURCE: Esri, 2016; ESA, 2019

2017 Storm Damage DWR Rehabilitation

Figure 1a
Phase 4 Repair Areas Regional Location

ESA



SOURCE: Esri, 2016; ESA, 2019

2017 Storm Damage DWR Rehabilitation

Figure 1b
Phase 5 Repair Areas Regional Location

ESA

2.3 General Construction Approach

The proposed project would repair and rehabilitate levees at various locations (see Table 2-1 and Figures 1a and 1b) using a variety of construction equipment, requiring different design considerations based on levee conditions. The repair and rehabilitation would be scheduled to occur within a permitted time period to avoid impacts on special-status species and wet weather conditions. The following information provides details regarding proposed repair and rehabilitation activities, environmental commitments, construction considerations, and proposed schedule for repairs. The environmental commitments described below in Section 2.4 include conservation measures and/or best management practices (BMPs), that were developed in coordination with resources agencies to avoid, minimize and/or provide compensation for effects to biological resources and water quality.

Typical construction activities at rehabilitation sites are be subdivided into the following stages:

1. Mobilization—site access and staging areas
2. Site preparation
3. Construction sequencing
4. Demobilization—restoration and cleanup

These stages are described in more detail in the following sections.

2.3.1 Mobilization – Site Access and Staging Area

Mobilization would take place at each levee rehabilitation site and includes: creation of temporary access roads and staging areas, if needed; securing the site; and, transporting equipment and materials to the site for later repair phases (e.g., clearing and grubbing, and construction of the repair). Access to repair sites would occur primarily along existing paved public roads, levee crown roads, or unpaved private farm roads. Where existing roads are not adequate for site access, temporary access roads may be constructed for hauling equipment and materials to and from the repair sites. At several sites, a barge crane may be used to transport and stock pile rock and soil to the repair site. Staging areas will be located close to the repair site and avoid sensitive habitats. For some repair sites, located close to one another, DWR has identified common staging area to serve those sites. The staging areas would be selected so removal of native trees or shrubs would be avoided and previously disturbed areas would be preferred.

For waterside repairs, staging areas would be preferentially located along the levee crown, waterside berm, or on waterside toe roads where areas are of sufficient size and free of woody vegetation. However, landside staging areas could also be used for stockpiling of materials and equipment. For landside and certain waterside repairs, staging areas may require construction easements from adjacent landowners. Activities that would occur within staging areas include: storage of necessary imported materials (e.g., rock, soil); parking, refueling, and servicing of construction equipment; establishing a temporary restroom; and, parking of construction worker vehicles. The repair sites' truck routes and temporary access road, and staging, laydown, and construction areas are shown in **Figures 2** to **31** at the end of this chapter. Further, detailed information for each of the repair sites, including current pictures of levee site conditions, acreage, length, construction design, and construction considerations are provided in **Appendix A**.

2.3.2 Site Preparation

Clearing and grubbing would be the first step in preparing each site for construction. Vegetation clearing could include the removal of submerged instream woody debris and fallen trees on the levee slope within the repair footprint. A turbidity curtain would be installed prior to conducting any in-water work, including the clearing of in-water vegetation. The repair work limits and staging areas would be fenced (orange construction fencing) to prevent vehicles and equipment from approaching the waterside edge of the existing bank (where applicable), to protect sensitive habitat, and to identify disturbance area limits.

Where necessary for construction, existing vegetation within the repair area would be removed during project construction except for trees or shrubs identified and marked for protection prior to construction. Box protection or other appropriate methods would be installed to protect any remaining trees from damage. Trees within the repair area identified for protection and outside the work limit may require trimming or removal for equipment clearance, excavation, or due to severely undermined tree health. The construction site would be cleared of grasses, ground cover, trash, or any other undesirable materials, using mechanized equipment.

2.3.3 Construction Process, Staging, Sequencing, and Equipment

Once each site is cleared and grubbed, each site would be excavated of existing rock and levee soils disturbed by the structural failure and transition zones, then the site would be excavated then graded to a 1.5 height (H): 1 vertical (V) slope unless otherwise specified by design specifications (see Appendix A for each of the repair sites design specifications and construction considerations). The back slope of the levee would be shaped for stability of clean rock placement. All excavated material will be hauled off site.

Geotextile fabric may be used as a filter separator between natural ground and rock slope protection (i.e. rockfill), launch rock, and soil filled rockfill[1] above and below standing or flowing water surfaces. Geotextile fabric would also be used to separate soil filled rockfill from launch rock. Geotextile fabric would be placed loosely upon the surface to prevent damage to the fabric when placing rock slope protection. All geotextile fabric placed above the water surface would be covered with rock slope protection within 72 hours of placement.

Geotextile fabric is incorporated into the erosion repair design because:

- It minimizes excavation into levee since bedding layer cannot be placed on steep slopes greater than 1 H:1 V;

[1] Rockfill and launch rock are defined as rock material that shall be clean, sound, hard, angular fragments of rock with no appreciable fines, and shall be free of cracks, seams, or other defects. Launch Rock is defined as material that shall be clean, sound, hard, angular fragments of rock with no appreciable fines, and shall be free of cracks, seams, or other defects. These rock materials differ slightly in the gradation in design specifications used by DWR on levees. Soil filled rockfill is defined as agricultural soil that shall be free of stones, lumps, roots and other debris larger than one inch and shall not contain herbicides, insecticides or other pesticides, salts, or other chemical compounds toxic to plant growth, aquatic flora and fauna or humans.

- It reduces the total number truck hauls that would be required to bring in sand or gravel to repair site if bedding layer was utilized;
- Placing bedding layer underwater is difficult or infeasible;
- A sand or gravel bedding layer would introduce a pervious layer that is thicker than geotextile which could create a seepage path due to the thickness required; and
- An additional layer of course bedding would be required as a transition to prevent migration of earthfill or soil-filled rockfill into launch rock/rockfill if geotextile was not used.

Using a long-arm bucket excavator or barge crane, the clean rock would be placed in the water at the toe of the bank up to the water elevation during construction. For soil-filled rockfill, rock would be placed in 2-foot lifts, and the voids would be filled with clean soil. Willow poles (if applicable) may be placed after construction to ensure underlying soil contact. In locations with earthfill, 0.5 feet of clean topsoil would be placed above the fill covered with erosion fabric to stabilize the bank. Once bank construction is completed, all disturbed soil remaining on the repair site would be seeded with a native erosion control seed mix according to the planting specifications.

2.3.4 Demobilization, Restoration, and Clean-up

Following levee rehabilitation construction, all equipment and materials would be removed from the repair site and excess materials would be disposed at appropriate facilities. Staging areas and temporary access roads, if constructed, would be ripped to loosen the soil surface and then seeded with a native grass mix to promote revegetation and minimize soil erosion. These areas would be restored to pre-project conditions to the extent feasible. Any damage as a result of the construction, including haul route roads and fencing, would be repaired. All areas would be cleaned and cleared of rubbish and left in a safe condition, suitable for use as intended.

2.3.5 Construction Timing and Equipment

Construction activities would take place at each site throughout the summer/fall of 2019 or 2020 (from July 2 through November 1). Each levee site would require approximately 2 to 4 weeks of active construction. All work would take place during daylight hours, and no nighttime lighting would be required. The maximum length of the work day would be 5 a.m. to 8 p.m. depending on allowable daylight. Noise ordinances will be followed for sites located in residential areas. At least three sites would be repaired concurrently, with up to nine sites being repaired at the same time, based on limitations of hauling, air quality permitting, and other potential permit restrictions by responsible agencies.

Heavy equipment and vehicles to be used during construction at a particular site may include the following:

- bobcat,
- compactors,
- water truck,
- loader,
- dozer,
- dump trucks,

- excavator,
- barges,
- pick-up trucks, and/or
- barge crane.

Approximately 60,561 round trip truckloads are expected to complete construction of all sites. Typically, seven workers are expected to be at a site each work day.

2.4 Environmental Commitments

The following describes the environmental commitments that DWR has incorporated into the proposed project. These environmental commitments include conservation measures and/or best management practices (BMPs). These environmental commitments were developed in coordination with the resources agencies to avoid, minimize and/or provide compensation for effects on biological resources. DWR would implement these environmental commitments as part of the proposed project construction activities. These commitments will be satisfied even if not separately imposed by permitting agencies and, if permitting agencies impose additional measures or modifications, these will also be adhered to as part of the permit(s). The environmental analysis in this IS considers them as elements of the proposed project when determine the significance of impacts.

2.4.1 General Biological Resources

DWR would minimize disturbance at repair areas by implementing the following measures and/or BMPs:

1. DWR will submit to the US Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and the National Marine Fisheries Service (NMFS) in writing the name, qualifications, business address, and contact information of a biologist(s) (qualified biologist) and obtain approval of the biologist(s) before starting repairs. DWR will ensure that the qualified biologist is knowledgeable and experienced in the biology and natural history of the fish or wildlife species. The qualified biologist will be responsible for monitoring repairs to help minimize and fully mitigate or avoid the incidental take of individual species and to minimize disturbance of species' habitat.

2. Prior to initiation of repair activities, a qualified biologist will conduct a pre-construction survey to identify special status species and associated habitat. Surveys will be conducted within the project footprint, laydown area, and adjacent haul route. If required, species and/or buffers will be marked in the field by a qualified biologist using temporary fencing, high-visibility flagging, or other means that are equally effective.

3. DWR will provide environmental awareness training by a qualified biologist to the DWR construction lead, construction foreman, crew leader, and any contractor personnel working on construction sites. Environmental awareness training will include descriptions of all special-status fish and wildlife species potentially occurring in the repair area for activity-specific training, their habitats, and methods of identification, including visual aids as appropriate. The training will also describe activity-specific measures that will be followed to avoid impacts. Hardcopies of environmental permits and training materials will be provided to the DWR construction lead, construction foreman, crew leader, and any contractors participating in repair work.

4. Use existing staging sites, maintenance toe roads, and levee crown roads to the extent practicable for staging and access to avoid affecting previously undisturbed areas.

5. Limit the number of access routes and the size of staging and work areas to the minimum necessary to conduct the activity.

6. Where feasible and practicable (e.g., based on the size of the repair area and repair to be performed), clearly mark work area limits (e.g., with flagging or fencing), including access roads; staging and equipment storage areas; stockpile areas for spoil disposal, soil, and materials; fueling and concrete washout areas; and equipment exclusion zones. Work will occur only within the marked limits. This measure is intended to apply to repair activities occurring in discrete areas as opposed to activities occurring over an extensive area where flagging work limits would be infeasible.

7. Inspect under all vehicles and heavy equipment for the presence of wildlife before the start of each workday when equipment is staged overnight. Additionally, look for wildlife in all pipes, culverts, and similar structures that have been stored on-site for one or more nights before being buried, capped, or moved.

8. All excavated, steep-walled holes or trenches will be covered with appropriate covers (thick metal sheets or plywood) at the end of each workday. Covers will be placed to ensure that trench edges are fully sealed. Alternatively, such trenches may be furnished with one or more escape ramps constructed of earth fill or wooden planks to provide escape ramps for wildlife.

9. Ensure that all project related trash items, such as wrappers, cans, bottles, and food scraps, are collected in closed containers, removed from rehabilitation sites each day, and disposed of at an appropriate off-site location to minimize attracting wildlife to work areas.

10. Keep the clearing of vegetation to the minimum necessary; especially minimize the clearing of native riparian vegetation and native oaks, and grubbing for temporary vehicle access to the extent practicable.

11. Where feasible, avoid removal of native trees with a trunk greater than (>) 4 inches in diameter at breast height (4.5 feet above the ground). Work will be done in a manner that ensures, to the extent feasible, that living native riparian vegetation within the vegetation-clearing zones is avoided and left undisturbed, where this can reasonably be accomplished without compromising repair requirements.

12. To the extent feasible, DWR will comply with applicable adopted city and county ordinances protecting native and heritage trees. If native or heritage trees need to be removed for public safety, or to meet other objectives, DWR, to the extent feasible, will implement the mitigation measures required by the ordinance that applies to the affected tree.

13. Trees within the repair area identified for protection and outside the work limit may require trimming or removal for equipment clearance, excavation, or due to severely undermined tree health. Trees that require trimming or removal will be under the guidance of a certified arborist. A qualified biologist will document all tree and sensitive plant trimming or removal.

14. If erosion control fabrics are used, products will not be used with plastic monofilament or cross-joints in the netting that are bound/stitched (such as straw wattles, fiber rolls, or erosion control blankets), which could trap giant garter snakes (GGS) and other wildlife.

15. DWR will install erosion control materials that minimize soil or sediment from entering waterways and wetlands. DWR will monitor the erosion control materials for effectiveness and maintain them throughout the repairs and monitoring. DWR will immediately repair or replace any erosion control barrier that is not functioning effectively.

16. The amount of revetment and similar materials used for bank protection and other repair activities will be limited to the amount necessary to ensure proper flood protection system integrity and function.

17. Remove temporary fill, construction debris, and refuse, and properly dispose of these materials following completion of any repair activities.

18. Habitats, including sensitive natural communities, will be restored to pre-project conditions wherever feasible. Restoration could include recontouring by grading and disking, revegetating with native seeds and plants reflective of the target plant community, decompacting soil, and installing appropriate erosion control measures to return the disturbed on-site habitat to pre-activity conditions.

19. For invasive plant species removal, DWR will implement measures to minimize the potential for invasive plants to be introduced or spread during activities. Measures to avoid contamination and spread of invasive species will be created for each site as deemed necessary by a qualified biologist and will be approved by a qualified biologist prior to implementation.

20. DWR will provide USFWS, NMFS, the Regional Water Quality Control Board (RWQCB), and/or CDFW (natural resource agencies) staff with reasonable access to all sites and shall otherwise fully cooperate with the natural resource agencies' efforts to verify compliance with, or effectiveness of, conservation measures.

21. The qualified biologist will be authorized to stop repair activities that, in the biologist's opinion, threaten to cause unanticipated and/or unpermitted adverse effects on special-status wildlife. If repair activities are stopped, the qualified biologist will consult with CDFW, USFWS and/or NMFS as appropriate to determine appropriate measures that DWR will implement to avoid adverse effects. Buffers will be maintained until there is no longer a threat of disturbance to the sensitive biological resource, as determined by a qualified biologist.

22. DWR will immediately notify the qualified biologist if a species is taken or injured by a project-related activity, or if a species is otherwise found dead or injured within the vicinity of the Project. The qualified biologist shall provide initial notification to USFWS, NMFS and/or CDFW by contacting the appropriate agencies. The initial notification shall include information regarding the location, species, and number of animals taken or injured, and site number. Following initial notification, DWR will send a written report within two calendar days. The report shall include the date and time of the finding or incident, location of the animal or carcass, and if possible provide a photograph, explanation as to cause of take or injury, and any other pertinent information.

2.4.2 Giant Garter Snake

If conducting repair activities that could adversely affect GGS, DWR would implement the following conservation measures:

1. If potentially suitable aquatic habitat for GGS has been identified in or within 200 feet of work area by a qualified biologist, DWR will establish a 200-foot buffer around the aquatic habitat. Buffers will be marked in the field with guidance from a qualified biologist using temporary fencing, high-visibility flagging, or other means that is equally effective in clearly delineating the buffers. Project activities will not occur within the buffer, and workers will avoid entering the buffer at all times. If avoidance buffers are observed, no other measures for impacts to GGS will be required, unless otherwise stated in applicable permits by natural resource agencies. If work must occur within 200 feet of potentially suitable aquatic habitat, DWR will implement the following measures as determined to be necessary by a qualified biologist.

    a. If GGS are observed in a repair area, DWR will stop work in the immediate area until the snake is out of the repair area and will notify a qualified biologist immediately. If possible, the snake will be allowed to leave on its own, and the qualified biologist will remain in the area until the biologist deems his or her presence no longer necessary to ensure that the snake is not harmed. If the snake does not leave the work area on its own volition, CDFW and USFWS will be consulted to identify next steps. This may include the capture and relocation of the snake unharmed to suitable habitat at least 200 feet from the repair area by a qualified biologist with a USFWS GGS recovery permit. DWR will notify CDFW and USFWS by telephone or email within 24 hours of a GGS observation during work activities.

    b. DWR will ensure that a qualified biologist surveys areas of planned ground disturbance and/or materials placement for burrows, soil cracks, and crevices that may be suitable for use by GGS when within suitable terrestrial habitat. Surveys will be completed no more than 3 days before conducting any ground-disturbing activities in terrestrial habitat potentially supporting GGS. Any identified burrows, soil cracks, crevices, or other habitat features will be flagged or marked by the qualified biologist or otherwise identified as biologically sensitive areas (BSAs). DWR will avoid these BSAs within proposed staging and interim laydown areas to the maximum extent feasible. If activities temporarily stop for more than 14 days, surveys for soil cracks and similar features will be repeated by a qualified biologist, as described above.

    c. When ground disturbance will occur in areas of suitable GGS habitat, a qualified biologist will monitor the work and walk the site prior to the beginning of construction.

    d. A qualified biologist shall be on site during all grading activities, vegetation removal activities, and trenching activities. A qualified biologist shall be onsite and monitor all locations where repairs will alter GGS hibernacula/refugia (rip rap, burrows, vegetation, etc.).

    e. When possible, DWR will complete work activities in terrestrial habitats that are potentially supporting GGS between May 1 and October 1. If it is not possible to complete the work by October 1, work in GGS upland habitat may also occur between October 2 and November 1 provided ambient air temperatures exceed

approximately 75°F during work and maximum daily air temperatures have exceeded approximately 75°F for at least 3 consecutive days immediately preceding work. During these periods, GGS are more likely to be active in aquatic habitats and less likely to be found in upland habitats. DWR will notify USFWS and CDFW of work in these locations. DWR will include a justification for the request and any additional information USFWS or CDFW deem necessary. USFWS and CDFW may require DWR to apply additional appropriate measures.

f. Temporarily affected GGS aquatic habitat will be restored in accordance with criteria listed in *the USFWS Mitigation Criteria for Restoration and/or Replacement of Giant gartersnake Habitat (Appendix A to Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Projects with Relatively Small Effects on the Giant gartersnake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, and Yolo Counties, California* [USFWS 1997]), or the most current criteria provided by USFWS and/or CDFW.

g. When feasible, spoils will be placed in areas that do not provide suitable GGS upland habitat (for example: compacted or gravel roadbeds, orchards, and recently disked agricultural fields).

h. If BSAs exist in the repair area, excavated spoils will be placed to avoid these BSAs, as feasible.

i. DWR will obtain incidental take authorization under FESA, and an incidental take permit(s) or Consistency Determination from CDFW to cover those areas and activities where there is the potential incidental take of GGS. Incidental take authorization from CDFW require DWR to fully mitigate for impacts. DWR would implement measures and mitigation associated with the authorization and permit(s).

2.4.3 Nesting Birds

If conducting repair activities that could adversely affect nesting bird species and their habitat, DWR would implement the following measures:

1. If the project occurs during the nesting period for birds (February 1 to September 15), DWR will complete pre-activity surveys for nesting birds (including, but not limited to, bank swallow, raptor and passerine nest surveys and heron and egret rookeries). Surveys will be conducted by a qualified biologist not more than 5 days prior to the start of activities. Surveys will be conducted within suitable nesting habitat that could be affected by repair activities (e.g., staging areas, spoils areas, access routes) and will include a 500-foot buffer area (or larger area if required by established survey protocol) surrounding these areas. Where appropriate, pre-activity surveys will follow established survey protocols or guidelines.

2. If active nests are found, DWR will establish an avoidance buffer as indicated in **Table 2-2** for activities that would potentially affect the nesting birds. The temporary disturbance buffer will be established until the young have fledged, are no longer being fed by the parents, have left the nest, and will no longer be impacted by the activities. Alternatively, a qualified biologist, in coordination with CDFW, may determine that a buffer is not required to avoid adverse effects on nesting birds, based on the specific activities to be conducted and species present.

TABLE 2-2
REQUIRED BUFFER DISTANCES FOR NESTING BIRDS

Resource	Buffer Distance
American peregrine falcon	500 feet
Bald eagle	0.25 mile
Burrowing owl	1500 feet
California black rail	300 feet
Common nesting birds	100 feet (passerines); 300 feet (raptors); 200 feet (herons/egrets)
Least Bell's vireo	500 feet
Loggerhead shrike	100 feet
Modesto song sparrow	100 feet
Northern harrier	300 feet
Swainson's hawk	0.25 mile (urban); 0.5 mile (rural or during use of heavy equipment)
Tricolored blackbird	250 feet
Western yellow-billed cuckoo	500 feet
White-tailed kite	500 feet
Yellow-breasted chat	100 feet
Bank swallow	100 feet

3. If project construction work is scheduled during the Swainson's Hawk nesting season (typically March 1 to September 30), a qualified biologist shall conduct a focused survey for active Swainson's Hawk nests prior to beginning construction. The biologist shall follow *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000) or with the most recent scientifically based survey methods and protocols, where appropriate.

4. If it is determined that any repair activity would potentially result in the incidental take of any bird protected under the FESA, CESA (e.g., western yellow-billed cuckoo, bank swallow, least Bell's vireo, Swainson's hawk, tricolored blackbird), despite implementation of the measures above, DWR will obtain take authorization from USFWS and/or CDFW (as appropriate). All measures developed through consultation with USFWS and/or CDFW will be implemented by DWR to mitigate for authorized take. As part of the take authorization, if onsite compensatory mitigation is proposed, an appropriate and feasible mitigation plan will be developed by a qualified biologist and provided to USFWS and/or CDFW for approval. The mitigation plan will include methods for implementation, success criteria, monitoring and reporting protocols, and contingency measures to be implemented if the initial mitigation fails. Alternatively, if required by permits, purchasing credits at a USFWS and/or CDFW-approved conservation bank may be identified as appropriate mitigation (see Section 2.5 below). Take of a California Fully Protected species (e.g., white-tailed kite, and California black rail) is not authorized.

2.4.4 Special-Status Fish

If conducting repair activities that could impact special-status fish or habitat, DWR would implement the following measures:

1. Areas of suitable habitat should be surveyed, avoided (whenever possible), or mitigated (through onsite restoration or credit purchase; see Section 2.5 below) when avoidance is not possible.
2. Whenever possible, in-water work would occur during standard in-water work windows:
    a. Delta and longfin smelt: August through November
    b. Salmon and steelhead: July through October
2. In areas where rock is placed to provide slope protection, place clean soil to fill voids, which could potentially provide favorable habitat for nonnative predatory fish species, as feasible.
3. Install willow pole cuttings beyond vegetation free zone to provide aquatic cover and shade, and habitat complexity favorable for native fish species at feasible locations.

2.4.5 Special-Status Plants

For repair activities that have the potential to impact special-status plants, DWR would implement the following measures:

1. Areas of suitable habitat should be surveyed, quantified, avoided (whenever possible), or mitigated when avoidance is not possible.
2. Before commencing the repair activity, the qualified biologist would survey suitable habitat (if present) within the disturbance footprint of the activity for the targeted special-status plant species.
3. If special-status plants are identified within the repair sites, the individuals or populations would be mapped, quantified, and reported to the CNDDB, and the DWR project manager would be notified so that potential impacts to these known occurrences would be avoided, when feasible. Coordination with CDFW and/or USFWS staff may also be necessary for developing appropriate avoidance and minimization measures if the species is federally or State listed. Avoidance and minimization measures may include:
    a. No-disturbance buffers.
    b. Silt fencing or construction fencing to prevent vehicles, equipment, and personnel from accessing the occupied habitat.
    c. Erosion control BMPs such as straw wattles made of rice straw, erosion control blankets, or hydroseeding with a native plant seed mix to prevent sedimentation from upslope repair activities.
    d. Before the repair activity commences, special-status plant occurrences would be marked with pin flags or stakes in the field, and all personnel would be instructed as to the location and extent of the special-status plants or populations and the importance of avoiding impacts to the species and its habitat.

e. If needed a biological monitor would be present or on-call during repair activities to provide guidance on avoiding special-status plants, ensure that other avoidance measures (buffers, fencing, etc.) are observed, and to document the total impact of the repair activity, particularly if it is greater or less than anticipated.

f. In consultation with CDFW or USFWS, the qualified biologist may collect and spread seeds or relocate plants to appropriate locations.

If work is required in areas where special-status plant populations are present and cannot be avoided, DWR would coordinate with CDFW or USFWS staff to develop appropriate minimization measures.

2.4.6 Valley Elderberry Longhorn Beetle

If conducting repair activities could adversely affect Velley Elderberry Longhorn Beetle (VELB), DWR would implement the following measures:

1. All suitable elderberry shrubs (i.e., shrubs with stem diameters of at least 1 inch when measured at ground level) would be avoided if not designated for removal or trimming. A 5-foot avoidance buffer would be established from the dripline of any elderberry shrubs. These avoidance buffers would be avoided by all personnel and repair activities. Shrubs would be flagged or temporarily fenced, as needed, with guidance from the qualified biologist and designated as BSAs where feasible. When feasible, fencing would be placed at the buffer.

2. Every attempt would be made to place box protection or tree wrap around the shrubs that can be left on the slope. Some trimming would occur.

3. If trimming is required within the drip line, no more than 1/3 of canopy cover or stems would be removed prior to implementing avoidance measures to ensure shrub survival.

4. If elderberry shrubs, which provide suitable habitat for VELB, cannot be feasibly avoided the work would result in potential take of VELB, then project impacts will be compensated for in accordance with criteria listed in the *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* (*Desmocerus californicus dimorphus*) [USFWS 2017]) (see Section 2.5).

2.4.7 Foothill Yellow-legged Frog

If conducting repair activities could adversely affect foothill yellow-legged frog, DWR would implement the following measures:

1. Within 3 days prior to entering or working near stream/riparian habitat within the foothill yellow-legged frog range, a qualified biologist shall conduct a survey in aquatic habitat and adjacent riparian habitat within the project site and a 500-foot buffer upstream and downstream of the repair area.

2. If foothill yellow-legged frogs are observed in the repair area, DWR would stop work in the immediate area until the frog is out of the area and will notify a qualified biologist immediately. If possible, the frog would be allowed to leave on its own, and the qualified biologist would remain in the area until the biologist deems his or her presence no longer

necessary to ensure that the frog is not harmed. If the frog does not leave the work area on its own volition, CDFW and USFWS will be consulted to identify next steps.

3. A qualified biologist shall be onsite and monitor all locations where repairs would occur within aquatic habitat where the frog has the potential to occur or was observed during the preconstruction survey.

2.4.8 Sensitive Habitats

1. Prior to initiation of repair activities, the qualified biologist would identify potential riparian habitat, wetlands, shallow water habitat, shaded riverine aquatic (SRA) cover, and native oaks. Where feasible, DWR would mark the boundaries of these areas using temporary fencing, high-visibility flagging, or other means that are equally effective in clearly delineating the boundaries. When feasible, repair activities would be excluded from these areas. In many situations, equipment can be operated to avoid disturbing isolated riparian trees or low-height riparian scrub habitat.

2. Trees that are designated to be protected in place would be protected using box or tree-wrap protection or other techniques as designated by the qualified biologist.

2.4.9 Water Quality

DWR will install appropriate BMPs to reduce the potential release of water quality pollutants to receiving waters through the implementation of BMPs and compliance with applicable permits. BMPs may include the following measures:

1. Conduct environmental awareness training to train the contractor on the proper use of BMPs and applicable permit requirements to protect receiving water quality.

2. DWR will install erosion control measures, such as use of straw bales, silt fences, fiber rolls, or equally effective measures, at project locations adjacent to stream channels, drainage canals and wetlands, as needed. During active construction activities, erosion control measures shall be monitored during and after each storm event for effectiveness. Modifications, repairs, and improvements to erosion control measures shall be made as needed to protect water quality.

3. DWR will install turbidity curtains or similar methods during in channel work to control silts and sediments, if needed.

4. DWR will minimize ground and vegetation disturbance by establishing designated equipment staging areas, access routes, spoils and soil stockpile areas, and equipment exclusion zones prior to the commencement of activity.

5. DWR will prepare and implement hazardous materials management and spill response plan. DWR will ensure any hazardous materials are stored at the staging areas and with an impermeable membrane between the ground and hazardous material and that it is bermed to prevent the discharge of pollutants to groundwater and runoff water. DWR will immediately stop and, pursuant to pertinent state and federal statutes and regulations, arrange for repair and clean up by qualified individuals of any fuel or hazardous waste leaks or spills at the time of occurrence, or as soon as it is safe to do so, according to the prepared spill response plan. DWR will notify USFWS, CDFW, and NMFS within 24 hours of any leaks or spills. DWR

will properly contain and dispose of any unused or leftover hazardous products off-site. DWR will use and store hazardous materials, such as vehicle fuels and lubricants, in designated staging areas located away from stream channels and wetlands according to local, State, and federal regulations, as applicable.

6. Construction vehicles and equipment will be checked daily for leaks and will be properly maintained to prevent contamination of soil or water from external grease and oil or from leaking hydraulic fluid, fuel, oil, and grease.

2.5 Compensation for Adverse Effects

1. If impacts to wetlands or waters of the U.S. cannot be feasibly avoided, then DWR would implement one of the following:

    a. DWR may opt to pay in-lieu fees for wetlands or waters of the U.S. permanent impacts authorized by the USACE through the in-lieu fee program of the Sacramento District of the USACE and administered by the National Fish and Wildlife Foundation, at a ratio determined in consultation with USACE.

    b. DWR may opt to secure wetlands or waters of the U.S. credits at a USACE-approved mitigation bank for permanent impacts at the repair sites, at a ratio determined in consultation with USACE.

2. Where impacts to GGS cannot be feasibly avoided, DWR will implement the following measure:

    a. All impacts to GGS aquatic and adjacent upland habitat will be restored in accordance with criteria listed in the USFWS Mitigation Criteria for Restoration and/or Replacement of Giant Garter Snake Habitat (Appendix A to Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Projects with Relatively Small Effects on the Giant Garter Snake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, and Yolo Counties, California [USFWS, 1997]), or the most current criteria provided by USFWS and/or CDFW. Any areas that cannot be restored, would be compensated for through the purchase of compensatory mitigation credits from a USFWS- and CDFW-approved bank at a ratio determined in consultation with USFWS and CDFW.

    b. DWR will obtain incidental take authorization under FESA, and an incidental take permit(s) or Consistency Determination from CDFW to cover those areas and activities where there is the potential incidental take of GGS. Incidental take permits from CDFW require DWR to fully mitigate for impacts. DWR would implement measures associated with the authorization and permit(s).

3. If elderberry shrubs, which provide suitable habitat for VELB, cannot be feasibly avoided, then DWR would implement the following measure:

    a. If any shrubs are proposed for removal, impacts will be compensated for in accordance with criteria listed in the Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*) [USFWS 2017]).

4. If impacts to riparian habitat (and/or SRA habitat) cannot be feasibly avoided, then DWR will implement one of the following measures:

    a. Restore riparian habitat (and/or SRA habitat) at an adjacent offsite or onsite location by planting native tree and shrub species of according to a plan developed in coordination with the appropriate agencies, CDFW, NMFW, and/or USFWS.

    b. Secure native riparian (and SRA) habitat credits or acres at a mitigation bank approved by CDFW (NMFS for SRA) for impacts to native riparian habitat on streams within the project area that support special status species at a ratio determined in consultation with CDFW and/or NMFS.

5. If shallow water habitat cannot be feasibly avoided and is filled or otherwise impacted, then DWR will implement the following measure:

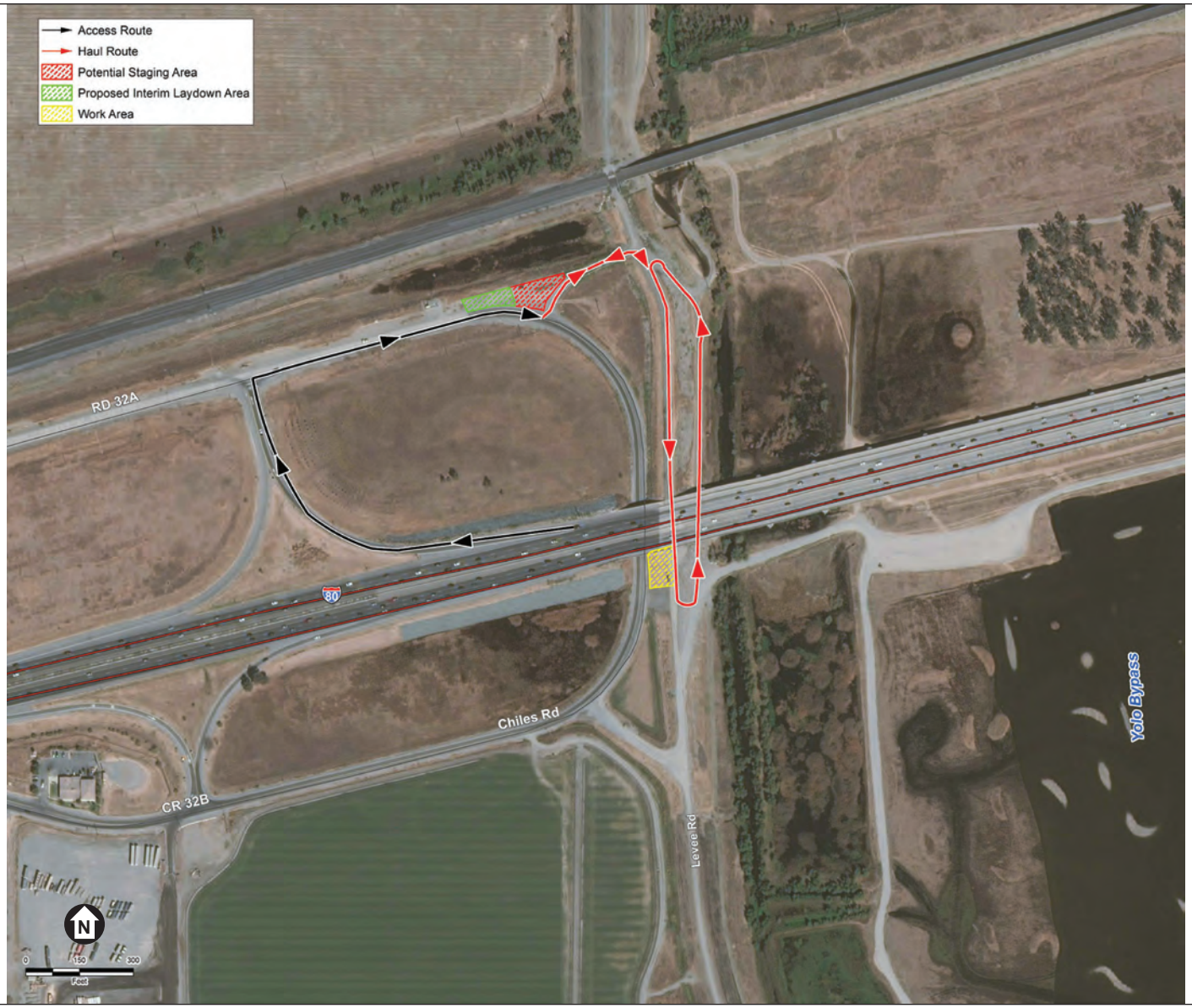
    a. To offset the permanent loss of tidally-influence riverine habitat (shallow water habitat) due to site repairs, DWR shall compensate for the loss at a ration determined in consultation with USFWS and CDFW. Credits shall be purchased at a mitigation bank approved by the resource agencies (e.g., USFWS and CDFW) for selling shallow water habitat credits.

2.6 Anticipated Regulatory Permits and Approvals

Table 2-3 lists the federal, State, and local permits and regulatory approvals that are expected to be necessary to conduct the proposed activities. The agencies responsible for issuing these approvals would consider the information presented in IS/MND during their deliberations.

TABLE 2-3
PERMITS AND APPROVALS POTENTIALLY NEEDED TO CONDUCT PERMITTED ACTIVITIES

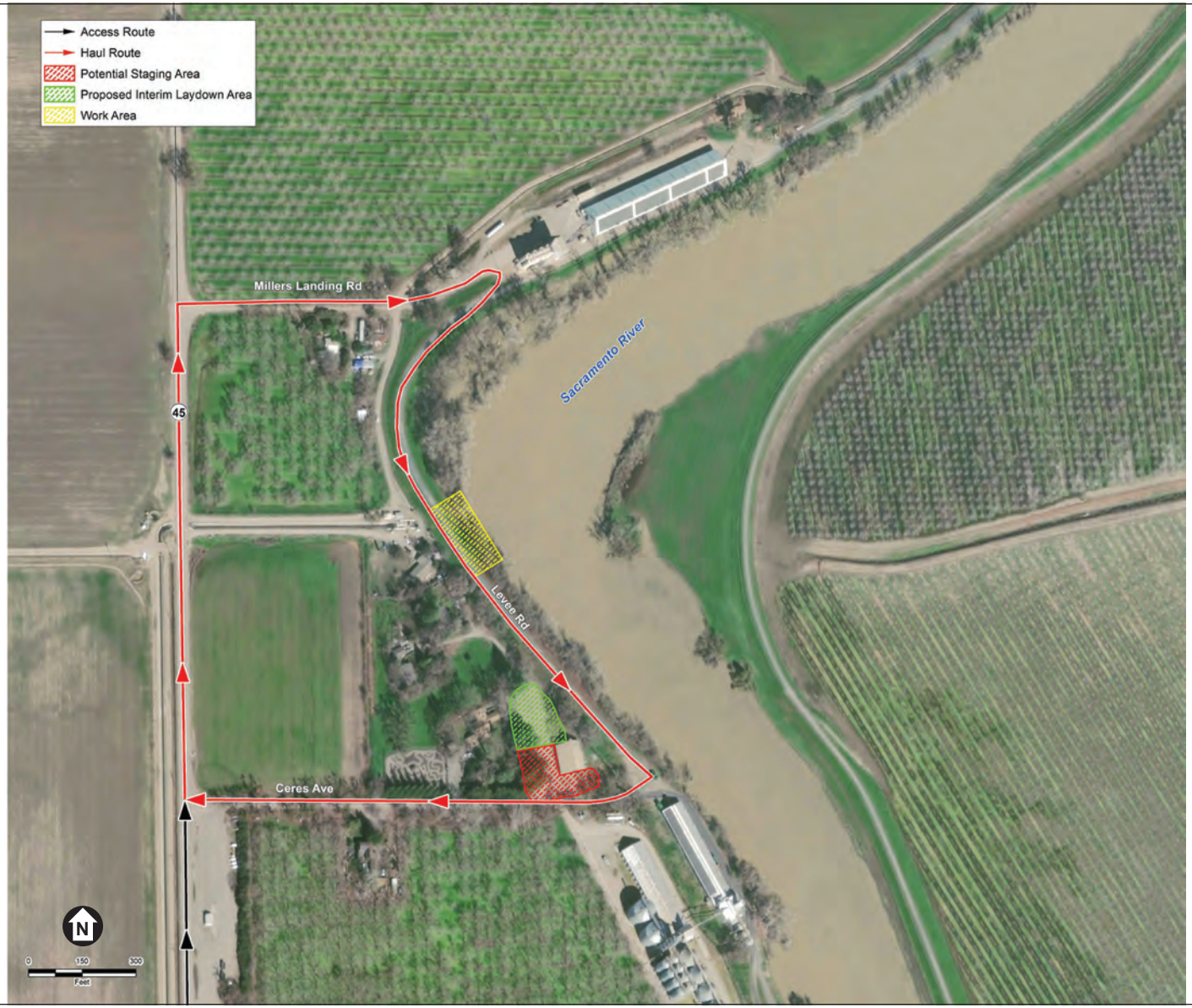
Permit	Permitting Authority	Affected Elements
Federal Permits/Approvals		
Clean Water Act Section 404/ Rivers and Harbor Act Section 10 Dredge and Fill Permit	U.S. Army Corps of Engineers	Permitted activities on facilities that would be constructed in Waters of the United States
Federal Endangered Species Act compliance	U.S. Fish and Wildlife Service	Permitted activities on facilities affecting federally listed special-status species
Federal Endangered Species Act compliance	National Marine Fisheries Service	Permitted activities on facilities affecting federally listed special-status fish species
State Permits/Approvals		
Clean Water Act Section 401 Water Quality Certification	Central Valley Regional Water Quality Control Board	Activities within jurisdictional Waters of the U.S. needing a Section 404 permit
Porter-Cologne Water Quality Control Act Waste Discharge Requirements (WDR)	Central Valley Regional Water Quality Control Board	Permitted activities on facilities that would be constructed in Waters of the United States
National Pollutant Discharge Elimination System General Construction Activity Permit	Central Valley Regional Water Quality Control Board	Permitted activities on facilities where runoff would discharge into surface water
California Endangered Species Act compliance	California Department of Fish and Wildlife	Permitted activities on facilities affecting state listed special-status species
Section 1601 et seq. Streambed Alteration Agreement	California Department of Fish and Wildlife	Permitted activities on facilities that would impact the bed or bank of a stream channel
Encroachment Permit	California Department of Transportation	Permitted activities on facilities within Caltrans rights-of-way or easements
National Historic Preservation Act Section 106 Compliance	Historic Preservation Office	Permitted activities on facilities that would affect cultural and historic resources listed or eligible for inclusion in the National Register of Historic Places
Local Permit/Approvals		
Encroachment Permit	Local jurisdictions (including counties, cities, and Reclamation Districts)	Permitted activities on facilities located within rights-of-way or easements managed by Counties, cities or other local jurisdictions



SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 2
Site 42



SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 3
Site 44

SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 4
Site 46

SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 5
Site 47

SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 6
Site 48

SOURCE: DWR, 2018

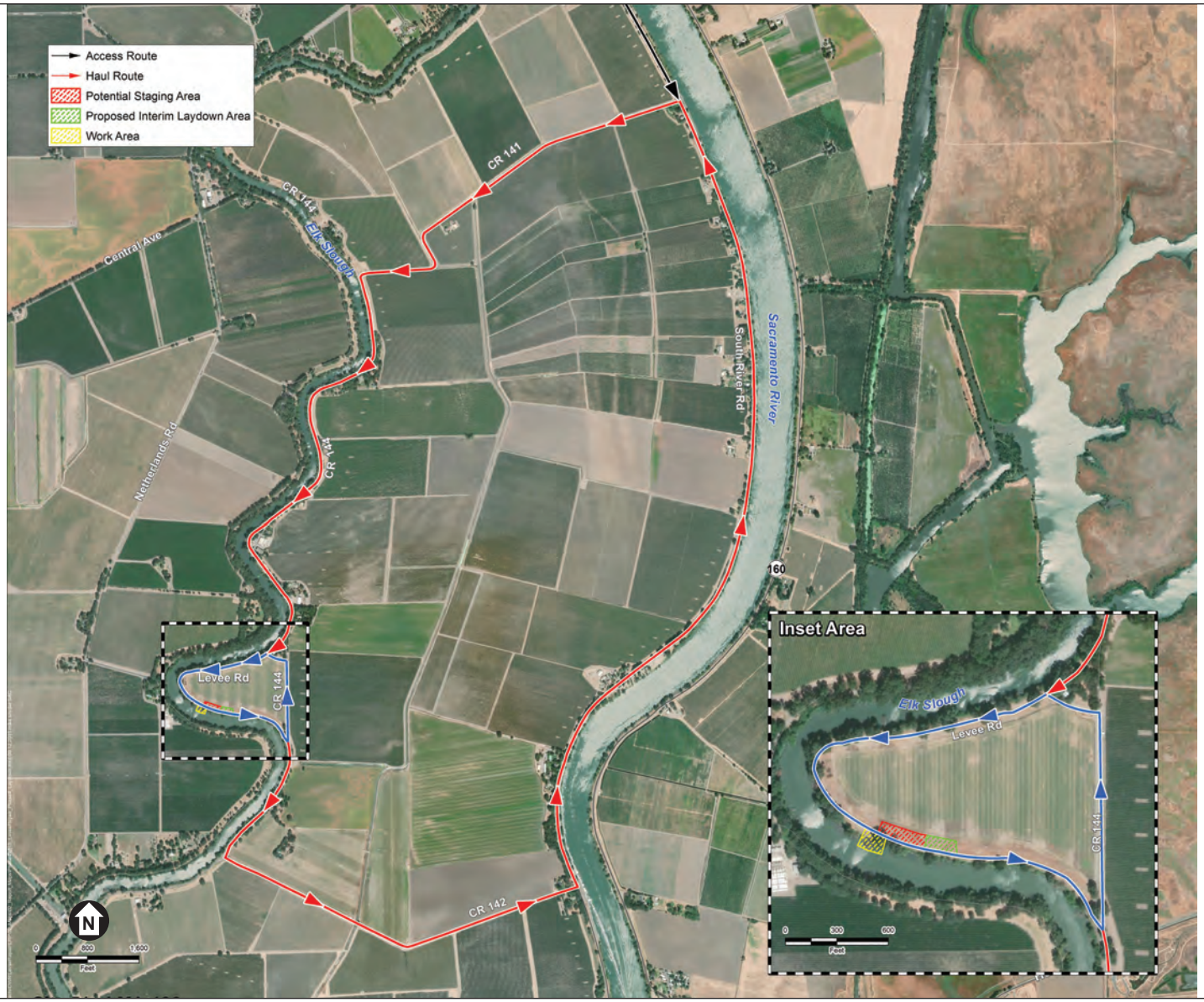
2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 7
Site 49

SOURCE: DWR, 2018

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 8
Site 50



SOURCE: DWR, 2018

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 9
Site 51

SOURCE: DWR, 2018

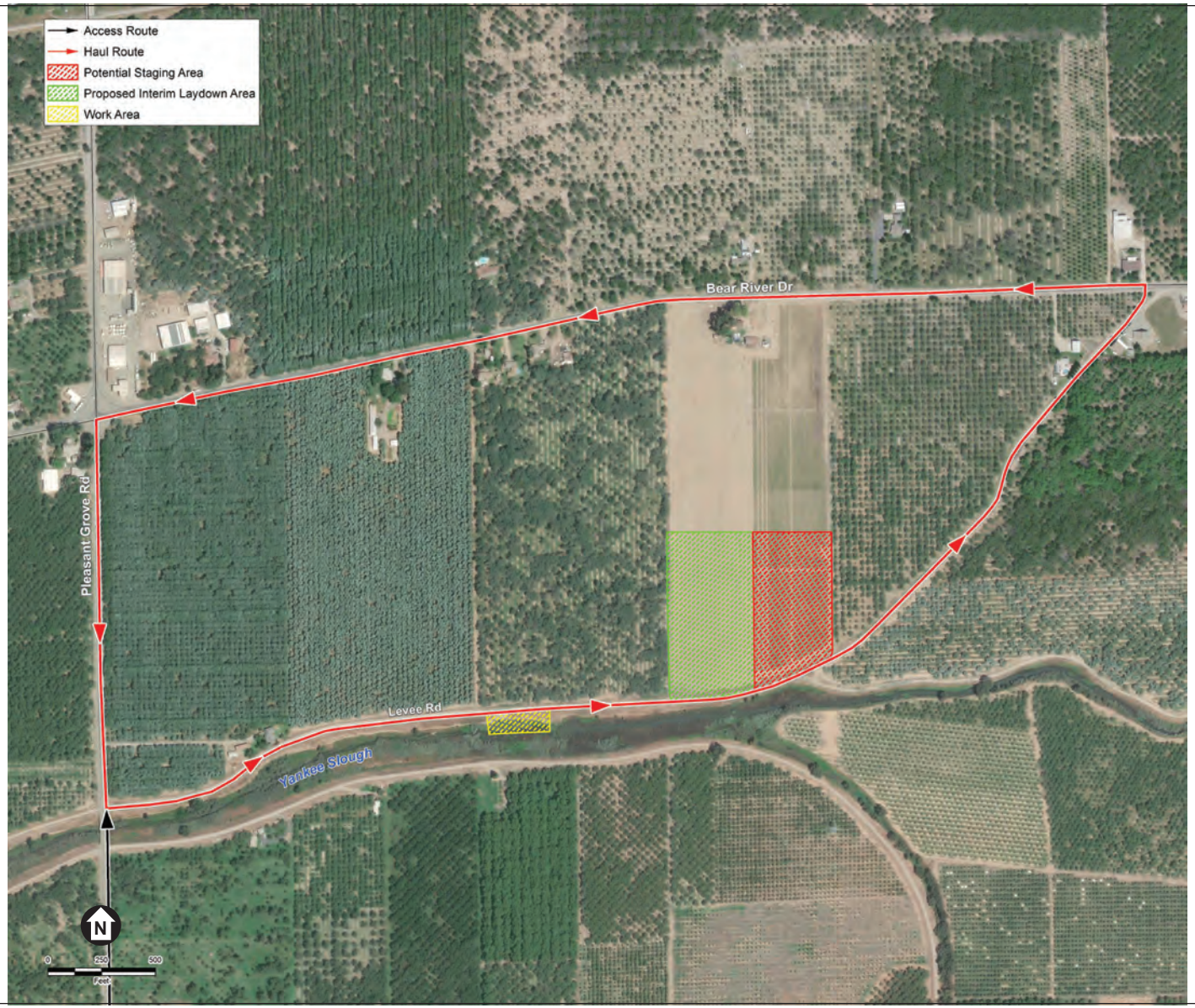
2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 10
Site 52

SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 11
Site 53



SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 12
Site 54

SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 13
Site 55

SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 14
Site 58

SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 15
Site 59

SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 16
Site 60

SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 17
Site 61

SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 18
Site 62

SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 19
Site 63

SOURCE: DWR, 2018

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 20
Site 65

SOURCE: DWR, 2018

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 21
Site 67

SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 22
Site 69

SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 23
Site 70

SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 24
Site 71

SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 25
Site 72

SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 26
Site 73

SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 27
Site 74

SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 28
Site 76

SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 29
Site 77

SOURCE: DWR, 2019

2017 Storm Damage DWR Rehabilitation . 130028.39

Figure 30
Site 79

CHAPTER 3
Initial Study

1. Project Title:	2017 Storm Damage DWR Rehabilitation Phases 4 and 5 Repair Sites
2. Lead Agency Name and Address:	California Department of Water Resources
3. Contact Person and Phone Number:	Kristin Ford, (916) 574-0368
4. Project Location:	See Chapter 2, Project Description
5. Project Sponsor's Name and Address:	California Department of Water Resources, Divisions of Flood Management 3310 El Camino Avenue Sacramento, CA 95821
6. General Plan Designation(s):	See Chapter 2, Project Description
7. Description of Project:	See Chapter 2, Project Description

8. Surrounding Land Uses and Setting.

See Chapter 2, Project Description and checklist for land use and setting information

9. Other public agencies whose approval is required

See Chapter 2, Project Description and checklist for specific permitting agencies

10. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

Yes, and yes.

3.1 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Less Than Significant With Mitigation Incorporated" as indicated by the checklist on the following pages.

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

DETERMINATION: (To be completed by the Lead Agency)
On the basis of this initial study:

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

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

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

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

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Scott Deal Acting Chief Flood Maintenance Office — 4-19-2019

Signature — Date

Signature — Date

3.2 Environmental Checklist

3.2.1 Aesthetics

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
1. AESTHETICS — Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	☐	☐	☐	☒

Discussion

The proposed project is located at 29 repair sites at existing State Plan of Flood Control levees in Yolo, Sutter, Tehama, Butte, Colusa, Glenn, San Joaquin, and Sacramento counties.

Land surrounding the project sites is primarily flat with rural agricultural uses and some developed residential and urban uses. There are no designated scenic vistas or State-designated scenic highways located in or around the proposed project repair sites. Notable scenic views from the project sites include Mount Shasta, Mount Lassen, the Sacramento River, the California Delta, and the Coast Range.

a) **No Impact.** The proposed project would include the repair and rehabilitation of levees to near original conditions, meeting existing flood design standards. The proposed project would not include the construction of any new or modified buildings or other structures that would block views from neighboring properties or roadways. Therefore, the proposed project would not obstruct or otherwise affect a scenic vista, and no impact would occur.

b) **No Impact.** A review of the current California Department of Transportation (Caltrans) Map of Designated State Scenic Highways indicated that there are no officially designated State scenic highways in or adjacent to the project repair sites (Caltrans 2018). Therefore, proposed project activities would not affect designated scenic resources within a State scenic highway, and no impact would occur.

c) **Less-than-Significant Impact.** The proposed project activities would be limited to the existing levees and adjacent lands and repair existing infrastructure and, therefore, would

not significantly alter the visual character of the repair sites and surroundings. Staging areas and temporary access roads would be returned to existing conditions by ripping to loosen the soil surface and then seeding with a native grass mix to promote revegetation and minimize soil erosion. This would restore the repair site to pre-project conditions, or better.

Any damage as a result of the construction, including haul route roads and fencing, would be repaired to existing or better conditions. All areas would be cleaned and cleared of rubbish and left in a safe and suitable condition. In addition, maintenance activities would be temporary in nature and would result in restoring the levees to their pre-flood damage appearance. Residents, local workers, and passers-by may view the project activities for the duration of the proposed project. However, construction is temporary, and there would be no permanent visual disturbance. The visual character of the levees and surrounding areas would not change as a result of the proposed project and the visual character would not be substantially degraded. This impact would be less-than-significant.

d) **No Impact.** The proposed project would repair and rehabilitate existing levees. There would be no new sources of light and glare. Furthermore, construction activities would occur during daylight hours and no impact would occur.

References

California Department of Transportation (Caltrans), 2018. Available: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm. Accessed October 30, 2018.

3.2.2 Agriculture and Forestry Resources

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
2. AGRICULTURE AND FORESTRY RESOURCES — In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. **Would the project:**				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion

The proposed project repair sites are located at 30 locations along State Plan of Flood Control levees which are primarily adjacent to agriculture land uses within the various counties. The lands adjacent to the project sites may contain prime farmland or be under Williamson Act Contracts. There are no forestry resources adjacent to or located in the proposed project sites.

a, b) **Less-than-Significant Impact.** The proposed project would occur at 29 repair sites which include sites that are adjacent to agricultural land. The land adjacent to the project sites could be Prime Farmland and/or under Williamson Act Contract. Access to project sites would occur primarily along existing paved public roads, levee crown roads, or unpaved private farm roads. However, temporary access roads may be constructed for hauling equipment and materials to and from the sites. Staging areas for each site would be located close to the repair site. Both the temporary access roads and staging areas could be on agricultural land, but would be temporary and restored to pre-project conditions, or better after construction is finished. Further, access roads and laydown areas are allowed uses of agricultural lands under existing land use policies and regulations. Therefore, the proposed project would not result in the permanent conversion of farmland to non-agricultural uses or conflict with existing zoning for agricultural use,

or a Williamson Act contract. The purpose of the proposed project is to restore the flood protection performance of the levees and decrease potential flood impacts to surrounding land. With the restored flood protection, this proposed project implements an objective that is supportive of and beneficial to continued agricultural use of the surrounding lands. This impact would be less-than-significant.

c, d) **No Impact.** The proposed project does not include forestry resources and would not conflict with zoning or rezoning of forest land or result in the loss of forest land or conversion of forest land to a non-forest use. No impact would occur.

e) **No Impact.** The proposed project would repair damaged levees and restore the flood control performance of the levees. The surrounding land does include agriculture; however, project activities would not take additional lands permanently out of production, change the surrounding agricultural land use, convert forest resources, and not conflict with zoning or rezoning of forest land. No impact would occur.

3.2.3 Air Quality

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

Environmental Setting

The proposed project levee repair sites are located in multiple air basins and under the jurisdiction of multiple Air Pollution Control Districts or Air Quality Management Districts. The following summarizes repair sites in terms of which district they are located, the attainment status of each district involved and their applicable CEQA thresholds of significance.

Sacramento Metropolitan Air Quality Management District (SMAQMD). The SMAQMD is the primary local agency with respect to air quality for all of Sacramento County, in which repair sites 46, 47, 58, 59, 60 and 77 are located. The County of Sacramento is within the Sacramento Valley Air Basin (SVAB), which also includes all of Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, Yolo, and Yuba Counties, the western portion of Placer County, and the eastern portion of Solano County.

The Sacramento County metro area is designated as a non-attainment area with respect to the state particulate matter (PM10) standard and the state and federal ozone standards.

The SMAQMD's CEQA thresholds of significance (2009a) specific to construction projects are 85 pounds per day of the ozone precursor nitrogen oxides (NOx), 80 pounds per day or 14.6 tons per year (tpy) of PM10, and 82 pounds per day or 15 tpy of PM2.5 as long as best available control technology (BACT)/best management practices (BMPs) are implemented to reduce particulates. If BACT/BMPs are not implemented the threshold is 0.

Yolo-Solano Air Quality Management District (YSAQMD). The YSAQMD has jurisdiction over all of Yolo County and the northeast portion of Solano County, including Vacaville, Dixon and Rio Vista. Sites 42, 48 through 53, 61, 63, 65, and 67 are located within the jurisdiction of the YSAQMD.

The YSAQMD's jurisdiction is designated as non-attainment area with respect to the state PM10 standard and the state and federal ozone standards.

The YSAQMD's CEQA thresholds of significance are 10 tpy, respectively for the ozone precursors NOx and ROG and 80 pounds per day of PM10.

Feather River Air Quality Management District (FRAQMD). The FRAQMD has jurisdiction over all of Sutter and Yuba Counties. Site 54 is located in Sutter County within the jurisdiction of the FRAQMD. Sutter County is designated as non-attainment area with respect to the state PM10 standard and as a transitional non-attainment area with respect to the state ozone standard.

The FRAQMD's CEQA thresholds of significance specific to construction projects are 25 pounds per day[2] of either ROG or NOx, respectively not to exceed 4.5 tpy and 80 pounds per day of PM10.

Colusa County Air Pollution Control District (CCAPCD). The CCAPCD has jurisdiction over all of Colusa County. Repair site 44 is located within the jurisdiction of the CCAPCD. Colusa County is designated as non-attainment area with respect to the state PM10 standard.

Currently, the CCAPCD has not established its own set of CEQA air quality significance thresholds. Consequently, the following analysis applies the CEQA thresholds adopted by the FRAQMD identified above to evaluate the air quality impacts of projects in Colusa County, as Colusa County shares similar attainment status, and geography, as the counties under FRQAMD jurisdiction.

San Joaquin Valley Air Pollution Control District (SJVAPCD). The SJVAPCD is made up of eight counties in California's Central Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare and the San Joaquin Valley Air Basin portion of Kern County. Repair sites 55, 62 and 69 through 74 are located within the jurisdiction of the SJVAPCD. The San Joaquin Valley is designated as non-attainment area with respect to both the state and federal standards for PM10, fine particulate matter (PM2.5), and ozone.

The SJVAPCD's CEQA thresholds of significance specific to construction projects are 100 tpy of carbon monoxide (CO), 10 tpy, respectively for the ozone precursors NOx and ROG, 27 tpy of sulfur oxides (SOx), and 15 tpy of either PM10 or PM2.5, respectively.

Tehama County Air Pollution Control District (TCAPCD). The TCAPCD has jurisdiction over all of Tehama County. Repair site 76 is located within the jurisdiction of the TCAPCD. Tehama County is designated as non-attainment area with respect to the state PM10 and ozone standards.

TCAPCD has established its own set of CEQA air quality significance thresholds as indicated in **Table AQ-1** below from the *Air Quality Planning and Permitting Handbook* (2015). Table AQ-1

[2] Construction-related NOx and ROG emissions may be averaged over the life of the project, but may not exceed 4.5 tpy.

provides general guidelines for determining the significance of impacts and type of environmental analysis recommended in relation to total emissions expected from project operations.

TABLE AQ-1
THRESHOLDS OF SIGNIFICANCE FOR CRITERIA POLLUTANTS OF CONCERN IN TEHAMA COUNTY

Pollutant	Level A	Level B	Level C
NOx	≤ 25 lbs/day	> 25 lbs/day	> 137 lbs/day
ROG	≤ 25 lbs/day	> 25 lbs/day	> 137 lbs/day
PM_{10}	≤ 80 lbs/day	> 80 lbs/day	> 137 lbs/day
Level of Significance	Potentially Significant Impacts	Potentially Significant Impacts	Significant Impacts
Environmental Document	Mitigated Negative Declaration (MND) or ND	Mitigated ND or EIR	EIR

Butte County Air Quality Management District (BCAQMD). The BCAQMD has jurisdiction over all of Butte County. Repair site 79 is located within the jurisdiction of the BCAQMD. Butte County is designated as non-attainment area with respect to the state PM10 and PM2.5 standards and the state and federal ozone standards.

The BCAQMD's CEQA thresholds of significance specific to construction projects are 137 pounds per day or 4.5 tpy, respectively for the ozone precursors NOx and ROG, and 80 pounds per day of PM10 (Butte County Air Pollution Control District 2014).

Discussion

The following analysis of air quality impacts considers the potential impacts related to emissions of nonattainment pollutants and their precursors. Although ozone, as a secondary pollutant, would not be directly emitted by construction equipment for the proposed project, the ozone precursors ROG and NOx would be emitted and are therefore, along with particulate matter, the focus of the impact assessment. Given that ozone formation occurs through a complex photo-chemical reaction between NO_X and ROG in the atmosphere with the presence of sunlight, the impacts of ozone are typically considered on a basin-wide or regional basis instead of a localized basis. The health-based ambient air quality standards for ozone are established as concentrations of ozone and not as tonnages of their precursor pollutants (i.e., NO_X and ROG). It is not necessarily the tonnage of precursor pollutants that causes human health effects, but the concentration of the resulting secondary pollutants which are ozone and particulate matter in this case. Because of the complexity of ozone formation and the non-linear relationship of ozone concentration with its precursor gases, and given the state of atmospheric modeling in use at this time, it is infeasible and not scientifically defensible to convert specific emissions levels of NO_X or ROG emitted in a particular area to a particular concentration of ozone in that area. Meteorology, the presence of sunlight, seasonal impacts, and other complex photochemical factors all combine to determine the ultimate concentration and

occurrence of ozone.[3,4] Nonetheless, since project construction would potentially exceed the numeric indicator for NO_X emissions in some air basins, it is possible that project construction NO_X emissions could result in an increase in ground-level ozone concentrations in proximity to a given repair site or elsewhere in the air basin and impacts would be potentially significant. Therefore, mitigation measures would be required and are discussed further below.

As expressed in the *amicus curiae* brief submitted for the *Sierra Club v. County of Fresno* case (*Friant Ranch Case*),[5,6] the CEQA criteria pollutants significance thresholds from the air districts were set at emission levels tied to the region's attainment status. These emission levels are indexed to stationary pollution sources permitted by the air district to compel the operator to offset their emissions and they are not intended to be correlated to localized human health impacts. Therefore, the project's exceedance of the mass regional emissions threshold prior to mitigation (i.e., pounds per day NOx thresholds) from construction-related activities does not necessarily indicate that the project will cause or contribute to the exposure of sensitive receptors to ground-level concentrations in excess of health-protective levels.

Furthermore, available models today are designed to determine regional, population-wide health impacts, and cannot accurately quantify ozone-related health impacts caused by NO_X or ROG emissions at a project level. Therefore, it is not scientifically defensible to connect the Project-level ROG or NO_X emissions to ozone-related health impacts at present.

a) **Less-than-Significant Impact.** The following analysis is organized by each air district.

Repair sites in SMAQMD jurisdiction. The *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2013 SIP Revisions)* (SMAQMD 2013), which addresses attainment of the federal 8-hour ozone standard, and the *2009 Triennial Report and Plan Revision* (SMAQMD 2009b), are the latest plans issued by the SMAQMD. In order to determine compliance with the applicable air quality plan, the SMAQMD recommends comparing the project to the SACOG growth projections included in the *Metropolitan Transportation Plan/Sustainable Communities Strategy* (MTP/SCS), a comparison of the project's projected vehicle-miles travelled (VMT) and population growth rate. The proposed project would not induce or otherwise increase the potential for growth in the areas adjacent to or served by the levee repair sites because the repairs would return the levees to previous flood protection standards. Given that the

3 SCAQMD, 2014, Application of the South Coast Air Quality Management District for Leave to File Brief of Amicus Curiae in Support of Neither Party and Brief of Amicus Curiae. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno.

4 SJVAPCD, 2014. Application for Leave to File Brief of Amicus Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in Support of Defendant and Respondent, County of Fresno and Real Party In Interest and Respondent, Friant Ranch, L.P. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno.

5 SCAQMD, 2014, Application of the South Coast Air Quality Management District for Leave to File Brief of Amicus Curiae in Support of Neither Party and Brief of Amicus Curiae. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno.

6 SJVAPCD, 2014. Application for Leave to File Brief of Amicus Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in Support of Defendant and Respondent, County of Fresno and Real Party In Interest and Respondent, Friant Ranch, L.P. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno.

proposed levee repair project would not result in growth inducing effects and would not result in permanent increase in vehicle trips, the proposed project would have a less-than-significant-impact with respect to conflict with, or obstruction of, implementation of an applicable air quality plan of the SMAQMD.

Repair sites in YSAQMD jurisdiction. To evaluate consistency with the regional air quality plans, the YSAQMD states in its 2007 CEQA Handbook that a lead agency should consider the local plan's consistency with AQAP and SIP population and vehicle use projections, the extent to which the plan implements air Quality Attainment Plan and State Implementation Plan transportation control measures, and whether the plan provides buffer zones around sources of odors and toxics. The proposed project would not induce or otherwise increase the potential for growth in the areas adjacent to or served by the levee repair sites because the repairs would return the levees to previous flood protection standards. Given that the proposed levee repair project would not result in growth inducing effects and would not result in permanent increase in vehicle trips, the proposed project would have a less-than-significant impact with respect to conflict with, or obstruction of, implementation of an applicable air quality plan of the YSAQMD.

Repair sites in SJVAPCD jurisdiction. To evaluate consistency with the regional air quality plans, the SJVAPCD states in its Guidance for Assessing and Mitigating Air Quality Impacts that because its thresholds of significance for criteria pollutant emissions, which are based on District New Source Review offset requirements for stationary sources projects, projects with emissions below the thresholds of significance for criteria pollutants would be determined to "Not conflict or obstruct implementation of the District's air quality plan". As indicated below, in the analysis of question b), project emissions would be below thresholds for criteria pollutants for repair site within the SJVAPCD jurisdiction. The proposed project would not induce or otherwise increase the potential for growth in the areas adjacent to or served by the levee repair sites because the repairs would return the levees to previous flood protection standards. Given that the proposed levee repair project would not result in growth inducing effects and would not result in permanent increase in vehicle trips, the proposed project would have a less-than-significant impact with respect to conflict with, or obstruction of, implementation of an applicable air quality plan of the SJVAPCD.

Repair sites in other jurisdictions. The remaining County APCD's and the FRAQMD have not published guidance pertaining to assessing a project or plan relative to the applicable Clean Air Plan, which for these Districts is the Northern Sacramento Valley Planning Area 2015 Triennial Air Quality Attainment Plan. The proposed project would not induce or otherwise increase the potential for growth in the areas adjacent to or served by the levee repair sites because the repairs would return the levees to previous flood protection standards. Given that the proposed levee repair project would not result in growth inducing effects and would not result in permanent increases in vehicle trips, the proposed project would have a less-than-significant impact with respect to conflict with, or obstruction of, implementation of the Northern Sacramento Valley Planning Area 2015 Triennial Air Quality Attainment Plan.

b) **Less than Significant with Mitigation Incorporated.** The proposed project would repair levee sites in multiple jurisdictions, most with their own specific emission thresholds for analysis under CEQA. Consequently, air emissions are analyzed separately for each air management district and assed individually. Thresholds established by each district represent a cumulatively considerable contribution to the regional air quality. Therefore, comparison to these thresholds also represents a cumulative air impact analysis with respect to regional emission of criteria air pollutants.

Construction-related emissions were estimated individually for each repair site using the most recent version of the CalEEMod emissions model (version 2016.3.2). Model inputs included the off-road equipment list provided in the project description and truck trips to bring material to each levee repair site. The model also calculated PM10 and PM2.5 emissions from fugitive dust as well as emissions from construction worker trips model reports are provided in **Appendix B**.

Some levee repair sites could be repaired using an in-water barge with a mounted crane to transport materials and a work boat. Emissions from these sources were estimated using emission factors generated by the Harbor, Dredge, and Barge Emission Factor Calculator of the SMAQMD which is also included in Appendix B.

Repair sites within SMAQMD jurisdiction. Repair sites 46, 47, 58, 59, 60 and 77 are located within Sacramento County. Of these 8 sites, 77 would use trucks to haul materials while the others could use either truck or barge. Therefore, emissions estimates were calculated under two assumptions: a) all site hauling by truck and b) site hauling by barge except for site 77. Emissions from scenarios a) and b) are presented in **Table AQ-2** and **AQ-3**, respectively and are compared to SMAQMD emission thresholds.

TABLE AQ-2
CRITERIA AIR POLLUTANT EMISSIONS WITHIN SMAQMD JURISDICTION HAUL TRUCK ONLY SCENARIO

	Emissions in pounds per day			
Levee Site #	**ROG**	**NOx**	**PM10**	**PM2.5**
46	3.6	64.0	12.6	6.6
47	3.4	57.2	12.1	6.5
58	4.2	82.5	13.3	6.9
59	3.3	53.3	11.5	6.3
60	2.8	36.0	10.4	6.0
77	2.6	29.7	10.4	5.9
SMAQMD Threshold	85	85	80 (with BMPs)	82 (with BMPs)

NOTE: The air quality modeling data is included as Appendix B.

TABLE AQ-3
CRITERIA AIR POLLUTANT EMISSIONS WITHIN SMAQMD JURISDICTION WITH BARGE TRANSPORT AND HAUL TRUCK SCENARIO

Levee Site #	Emissions in pounds per day			
	ROG	NOx	PM10	PM2.5
46 (barge)	7.9	**85.6**	4.8	4.2
47 (barge)	7.3	80.3	4.4	3.5
58 (barge)	14.0	**153.8**	8.4	7.4
59 (barge)	7.6	83.6	4.6	4.0
60 (barge)	3.8	41.9	2.3	2.0
77 (truck)	2.6	29.7	10.4	5.9
SMAQMD Threshold	85	85	80 (with BMPs)	82 (with BMPs)

NOTE: The air quality modeling data is included as Appendix B.

As shown in Table AQ-2, individually, emissions from all repair sites would be below the SMAQMD emission thresholds for ROG, NOx, PM10 and PM2.5.

As shown in Table AQ-3, with barge transport of materials emissions from repair sites 46 and 58 would be increased compared to truck transport and would also exceed the SMAQMD emission threshold for NOx, primarily as a result of emissions from barge emissions, which although would require fewer trips have greater NOx emission potential. Therefore, a mitigation measure is identified for these two repair site to require use of trucks to haul material instead of barges to ensure that construction emissions from individual repair sites would be less than significant.

Additionally, a cumulative impact within the jurisdiction could occur if a majority of the repair sites were to be active simultaneously. Therefore, a mitigation measure is identified to restrict repair sites with high volume truck trips are not active simultaneously within SMAQMD jurisdiction.

Repair sites within YSAQMD jurisdiction. Repair sites 42, 48 through 53, 61, 63, 65, and 67 are located within Yolo County. Of these 11 sites, 42 and 49 through 53 would use trucks to haul materials while the others could use either truck or barge. Therefore, emissions estimates were calculated under two assumptions: a) all site hauling by truck and b) site hauling by barge for those with river or slough access. Emissions from scenarios a) and b) are presented in **Table AQ-4** and **AQ-5**, respectively and are compared to YSAQMD emission thresholds of 10 tpy, respectively of the ozone precursors NOx and ROG and 80 pounds per day of PM10.

TABLE AQ-4
CRITERIA AIR POLLUTANT EMISSIONS WITHIN YSAQMD JURISDICTION HAUL TRUCK ONLY SCENARIO

Levee Site #	Emissions		
	ROG (tons/year)	NOx (tons/year)	PM10 (pounds/day)
42	0.04	0.80	14.1
48	0.03	0.42	10.7
49	0.03	0.34	10.5
50	0.03	0.37	10.8
51	0.03	0.28	10.2
52	0.03	0.30	10.3
53	0.03	0.28	9.8
61	0.04	0.83	18.4
63	0.04	0.83	13.2
65	0.03	0.39	10.5
67	0.03	0.33	10.1
YSAQMD Threshold	10	10	80

TABLE AQ-5
CRITERIA AIR POLLUTANT EMISSIONS WITHIN YSAQMD JURISDICTION WITH BARGE TRANSPORT AND HAUL TRUCK SCENARIO

Levee Site #	Emissions in pounds per day		
	ROG	NOx	PM10
42 (truck)	0.04	0.80	14.1
48 (barge)	0.06	0.62	3.3
49 (truck)	0.03	0.34	10.5
50 (truck)	0.03	0.37	10.8
51 (truck)	0.03	0.28	10.2
52 (truck)	0.03	0.30	10.3
53 (truck)	0.03	0.28	9.8
61 (barge)	0.22	2.5	12.8
63 (barge)	0.10	1.1	5.78
65 (barge)	0.03	0.38	2.0
67 (barge)	0.03	0.29	1.6
YSAQMD Threshold	10	10	80 (with BMPs)

As shown in Table AQ-4, emissions from all repair sites would be below the YSAQMD emission threshold for ROG, NOx, and PM10 under the truck hauling scenario. This would be a less-than-significant impact and no mitigation is required. However, a cumulative PM10 impact within the jurisdiction could occur if a majority of the repair sites were to be

active simultaneously. Therefore, a mitigation measure is identified to ensure that no more than six repair sites are active simultaneously within YSAQMD jurisdiction.

As shown in Table AQ-5, emissions from all repair sites would be below the YSAQMD emission threshold for ROG, NOx, and PM10 under the barge hauling scenario. This would be a less-than-significant-impact and no mitigation is required. However, a cumulative PM10 impact within the jurisdiction could occur if a majority of the repair sites were to be active simultaneously. Therefore, a mitigation measure is identified to ensure that no more than six repair sites are active simultaneously within YSAQMD jurisdiction.

Repair site within FRAQMD jurisdiction. Repair site 54 is located within Sutter County. CEQA emission thresholds in the FRAQMD jurisdiction are 10 tpy, respectively of the ozone precursors NOx and ROG and 80 pounds per day of PM10. Material hauling for site 54 would be done by truck. Emission estimates for this site are 0.03 tpy of ROG, 0.38 tpy of NOx and 10.9 pounds per day of PM10, which are all below FRAQMD thresholds. This would be a less-than-significant impact and no mitigation is required.

Repair site within CCAPCD jurisdiction. Repair site 44 is located within Colusa County. CEQA emission thresholds applied to Colusa County in this analysis are those of the FRAQMD jurisdiction which are 10 tpy, respectively of the ozone precursors NOx and ROG and 80 pounds per day of PM10. Material hauling for site 44 would be done by truck. Emission estimates for this site are 0.03 tpy of ROG, 0.43 tpy of NOx and 11.3 pounds per day of PM10, which are all below FRAQMD thresholds. This would be a less-than-significant-impact and no mitigation is required.

Repair sites within SJVAPCD jurisdiction. Repair sites 55, 62 and 69 through 74 are located within San Joaquin County in the jurisdiction of the SJVAPCD. The SJVAPCD's CEQA thresholds of significance specific to construction projects are 100 tpy of carbon monoxide (CO), 10 tpy, respectively of the ozone precursors NOx and ROG, 27 tpy of sulfur oxides (SOx), and 15 tpy of either PM10 or PM2.5, respectively. Material hauling for all sites would be done by truck.

Estimated emissions are presented in **Table AQ-6** and are compared to SJVAPCD emission thresholds. As shown in Table AQ-6, emissions from all repair sites would be below the SJVAPCD emission thresholds for CO, ROG, NOx, SOx, PM10 and PM2.5. This would be a less than-significant-impact and no mitigation is required.

TABLE AQ-6
CRITERIA AIR POLLUTANT EMISSIONS WITHIN SJVAPCD JURISDICTION

Levee Site #	Emissions in tons per year					
	CO	ROG	NOx	SOx	PM10	PM2.5
55	0.31	0.05	1.1	0.003	0.17	0.08
62	0.17	0.02	0.27	<0.001	0.11	0.06
69	0.30	0.05	1.04	0.003	0.17	0.08
70	0.18	0.03	0.32	<0.001	0.11	0.06
71	0.20	0.03	0.42	0.001	0.12	0.06
72	0.22	0.04	0.56	0.001	0.13	0.07
73	0.23	0.04	0.65	0.001	0.14	0.07
74	0.27	0.04	0.85	0.002	0.15	0.08
SJVAPCD Threshold	100	10	10	27	15	15

Repair site within TCAPCD jurisdiction. Repair site 76 is located within Tehama County. CEQA emission thresholds in the TCAPCD jurisdiction are 25 pounds per day, respectively of the ozone precursors NOx and ROG and 80 pounds per day of PM10. A project with emissions exceeding these levels indicate a potentially significant impact warranting mitigation. Emissions exceeding 137 pounds per day of ROG, NOx or PM10 are considered significant. Material hauling for site 76 would be done by truck. Emission estimates for this site are 3.8 pounds per day of ROG, 67.1 pounds per day of NOx and 13.1 pounds per day of PM10. NOx emissions would exceed the 25 pound per day threshold warranting mitigation. Mitigation Measure AQ-4 implements best management practices for controlling construction emissions identified by TCAPCD in its CEQA Guidelines. With mitigation NOx emissions would not exceed the 137 pound per day significance threshold and would be less than significant.

Repair site within BCAPCD jurisdiction. Repair site 79 is located within Butte County. CEQA emission thresholds in the BCAPCD jurisdiction are 137 pounds per day, respectively of the ozone precursors NOx and ROG, and 80 pounds per day of PM10. Material hauling for site 79 would be done by truck. Emission estimates for this site are 2.5 pounds per day of ROG, 25.6 pounds per day of NOx and 10.1 pounds per day of PM10, which are all below BCAPCD thresholds. This would be a less-than-significant impact and no mitigation is required.

Mitigation Measure AQ-1: Implement DWR Best Management Practices (BMPs) for Construction. The following measures identified in DWR's Climate Action Plan will reduce construction-related emissions of NOx and are applicable to repair sites in Sacramento County and Tehama County:

BMP 7. Minimize idling time by requiring that equipment be shut down after five minutes when not in use (as required by the State airborne toxics control measure [Title 13, Section 2485 of the California Code of Regulations]). Provide

clear signage that posts this requirement for workers at the entrances to the site and provide a plan for the enforcement of this requirement.

BMP 12. For deliveries to project sites where the haul distance exceeds 100 miles and a heavy duty class 7 or class 8 semi-truck or 53-foot or longer box type trailer is used for hauling, a SmartWay[7] certified truck will be used to the maximum extent feasible.

Mitigation Measure AQ-2: Truck Hauling requirements for Repair Sites 46 and 58. Material hauling for Repair Sites 46 and 58 shall be conducted using trucks and not barges to reduce daily emission of NOx to below SMAQMD significant thresholds.

Mitigation Measure AQ-3: Avoid Concurrent Activities of Repair Sites in Sacramento County. This measure applies to all repair sites in Sacramento County. DWR shall schedule work to avoid concurrent activities of repair sites 46, 47, 58, and 59 with any other repair site such that daily NOx emissions would not cumulatively exceed 85 pounds per day on the same day.

Mitigation Measure AQ-4: Limit Concurrent Activities of Repair Sites in YSAQMD Jurisdiction. This measure applies to all repair sites in YSAQMD jurisdiction. DWR shall schedule work to restrict concurrent activities of repair sites to no more than six at any one time to ensure that daily PM10 emissions would not cumulatively exceed 80 pounds per day.

Mitigation Measure AQ-5: Implement Construction BMPs for Tehama County. The following measures identified in TCAPCD's CEQA Guidelines will reduce construction-related emissions of NOx and are applicable to construction equipment for the repair site in Tehama County:

- Maintain all construction equipment in proper tune according to manufacturer's specifications.
- Maximize to the extent feasible, the use of diesel construction equipment meeting current CARB certification standards for off-road heavy-duty diesel engines.
- Registration of off-road equipment in the California Air Resources Board's DOORS program and meeting all applicable standards for replacement and/or retrofit.
- All portable equipment, including generators and air compressors rated over 50 brake horse power, shall be registered in the Portable Equipment Registration Program (PERP), or permitted through the District as a stationary source.

[7] The U.S. Environmental Protection Agency has developed the SmartWay truck and trailer certification program to set voluntary standards for trucks and trailers that exhibit the highest fuel efficiency and emissions reductions. These tractors and trailers are outfitted at point of sale or retrofitted with equipment that significantly reduces fuel use and emissions including idle reduction technologies, improved aerodynamics, automatic tire inflation systems, advanced lubricants, advanced powertrain technologies, and low rolling resistance tires.

- Water shall be applied by means of truck(s), hoses and/or sprinklers as needed prior to any land clearing or earth movement to minimize dust emission.
- Haul vehicles transporting soil into or out of the property shall be covered to reduce track out.
- Water shall be applied to disturbed areas a minimum of 2 times per day or more as necessary to reduce fugitive dust emissions.

c) **Less-than-Significant Impact.** Diesel powered construction equipment can generate diesel particulate matter which has been identified by the California Air Resources Board (CARB) as a toxic air contaminant. Repair sites are located in rural areas and are generally located a long distance from any sensitive receptors. Additionally, the duration of repairs for each site is proposed to be 4 weeks. The state Office of Environmental Health Hazard Assessment (OEHHA) has published Guidelines for performing health risk assessments to evaluate potential health exposure impacts to sensitive populations (OEHHA 2015). This guidance states that it does not recommend assessing cancer risk for projects lasting less than two months for any sensitive receptor.

Consequently, given the short duration of construction activity at each site and the distance to sensitive receptors, the project would have a less-than-significant impact with respect to exposure of sensitive receptors to substantial pollutant concentrations.

d) **Less-than-Significant Impact.** Diesel powered construction equipment can generate short term, non-persistent odors due to engine exhaust. Repair sites are located in rural areas and are generally located distant from sensitive receptors. Specifically repair sites 44, 47, 48, 52, 61, 71 and 79 have a single rural residence approximately 400 feet away as the closest receptor. Repair sites 50, 58, 59 and 63 have a single rural residence approximately 200 feet away as the closest receptor. Repair sites 60, 65 and 67 have a single rural residence approximately 100 feet away as the closest receptor. All other repair sites are distant from sensitive receptors.

While some repair sites may be active as close as 100 feet from a receptor, given the short duration of construction activity at each site and the rural residential areas in which they would occur, odors from diesel equipment exhaust would be a brief occurrence and would not effect a substantial number of people and therefore, the project would have a less-than-significant impact with respect to creation of odors affecting a substantial number of people.

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3.2.4 Biological Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
4. BIOLOGICAL RESOURCES — Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Environmental Setting

Information in this section is based on data collected during reconnaissance-level field surveys conducted by ESA biologists on October 8, 9, 10, 15, 16, and 17, 2018, and review of other relevant documentation for the repair sites and surrounding vicinity including:

- CDFW's California Natural Diversity Database (CNDDB) records search for special-status species documented on the Sacramento West, Davis, Kirkville, Llano Seco, Rio Vista, Courtland, Clarksburg, Sheridan, Vernalis, Lathrop, Stockton West, Gerber, Isleton, and Chico U.S. Geological Survey (USGS) 7.5-minute quadrangles (**Appendix C**);
- CDFW's CNDDB 5-mile radius around the repair sites (CDFW 2018) (Appendix C);
- USFWS List of Threatened and Endangered Species (USFWS 2018) (Appendix C); and
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants for special-status plants documented on the Sacramento West, Davis, Kirkville, Llano Seco, Rio Vista, Courtland, Clarksburg, Sheridan, Vernalis, Lathrop, Stockton West, Gerber, Isleton, and Chico U.S. Geological Survey (USGS) 7.5-minute quadrangles (CNPS 2018) (Appendix C).

As described previously in Chapter 2, the repair sites occur in discrete locations along levees of the Sacramento River, San Joaquin River, Old River, Yankee Slough, Elk Slough, Steamboat Slough, Yolo Bypass, Georgiana Slough, Butte Creek, and Elder Creek. Surrounding land uses consist of agricultural land, residential development, and urban. Habitat within the repair sites (including staging and laydown areas, and access roads) includes riparian, annual grassland, agricultural land, disturbed, developed, and riverine (**Figure BIO-1**). Habitat types by repair sites are summarized in **Table BIO-1** and shown in the figures included in Appendix C.

TABLE BIO-1
HABITAT TYPES BY REPAIR SITE

Phase	Site	Waterway	Habitats by Repair Sites
4	42	Yolo Bypass	Ruderal/disturbed
	44	Sacramento River	Grassland, riparian, riverine
	46	Steamboat Slough	Riparian, riverine, developed
	47	Steamboat Slough	Riparian, riverine, grassland, developed
	48	Sacramento River	Grassland, riverine, developed
	49	Elk Slough	Riparian, riverine, grassland, developed
	50	Elk Slough	Riparian, riverine, grassland, developed
	51	Elk Slough	Riparian, riverine ruderal/disturbed
	52	Elk Slough	Riparian, riverine, grassland, ruderal/disturbed
	53	Elk Slough	Riparian, riverine, ruderal/disturbed
	54	Yankee Slough	Grassland, ruderal/disturbed
	55	San Joaquin River	Ruderal/disturbed, riverine, developed
5	58	Sacramento River	Grassland, riparian, riverine
	59	Sacramento River	Grassland, riverine, ruderal/disturbed
	60	Sacramento River	Riverine, developed, ruderal/disturbed
	61	Sacramento River	Riparian, riverine, grassland
	62	San Joaquin River	Ruderal/disturbed, developed, riverine
	63	Sacramento River	Riparian, riverine, developed, ruderal/disturbed
	65	Sacramento River	Riparian, riverine, grassland, developed
	67	Sacramento River	Riparian, riverine, developed, grassland
	69	San Joaquin River	Ruderal/disturbed, riverine
	70	San Joaquin River	Riparian, ruderal/disturbed, riverine
	71	Old River	Riparian, riverine, ruderal/disturbed
	72	Old River	Riparian, riverine, ruderal/disturbed, grassland
	73	Old River	Riparian, riverine, ruderal/disturbed
	74	Old River	Ruderal/disturbed, riparian, riverine
	76	Elder Creek	Grassland, riverine, developed
	77	Georgiana Slough	Grassland, riverine, ruderal/disturbed
	79	Butte Creek	Riparian, riverine, grassland, ruderal/disturbed

Riparian habitat includes Fremont cottonwood (*Populus fremontii* ssp. *fremontii*), box elder (*Acer negundo*), white alder (*Alnus rhombifolia*), Northern California black walnut (*Juglans hindsii*), narrow-leaved willow (*Salix exigua* var. *exigua*), Goodding's black willow (*Salix gooddingii*), Oregon ash (*Fraxinus latifolia*), valley oak (*Quercus lobata*), California button willow (*Cephalanthus occidentalis*), western sycamore (*Platanus racemosa*), western poison oak (*Toxicodendron diversilobum*), California rose (*Rosa californica*) and blue elderberry (*Sambucus nigra* ssp. *caerulea*).

Annual grassland includes ripgut grass (*Bromus diandrus*), Bermuda grass (*Cynodon dactylon*), soft chess (*Bromus hordeaceus*), wild oat (*Avena fatua*), and barley (*Hordeum murinum*). Trees occur in isolated locations within some of the repair sites.

Agricultural land consists of ground crops, including rice, or orchards. Disturbed land includes riprap, or areas that have previously been manipulated including areas on the sides of levees where vegetation maintenance occurs. Developed includes paved and graded roads.

Several species known to occur in the vicinity of repair sites are protected pursuant to federal and/or State endangered species laws, or have been designated as Species of Special Concern by the CDFW. In addition, Section 15380(b) of the CEQA Guidelines provides a definition of rare, endangered, or threatened species that are not included in any listing. For example, vascular plants listed as rare or endangered or as California Rare Plant Rank (CRPR) List 1 or 2 by the CNPS are considered to meet Section 15380(b) requirements. Species recognized under these terms are collectively referred to as "special-status species."

Special-status species considered for this analysis are based on the CNDDB, CNPS, and USFWS lists. A comprehensive list of special-status plant and wildlife species that were considered in the analysis is provided in Appendix C. The list includes the common and scientific names for each species, regulatory status (federal, State, local, CNPS), habitat descriptions, and a discussion of the potential for occurrence within the repair sites. The following set of criteria has been used to determine each species potential for occurrence within the repair sites:

> *High:* Species known to occur on or near the repair sites (based on CNDDB records within 5 miles of the repair sites) and there is suitable habitat within or in the vicinity of the repair sites.
>
> *Low:* Species known to occur in the vicinity of the repair sites and there is marginal habitat within the repair sites or species is not known to occur in the vicinity of the repair sites, however, there is suitable habitat on the repair sites.
>
> *None:* There is no suitable habitat within or in the vicinity of the repair sites regardless of whether occurrences are documented within the vicinity or plant species were not observed during surveys conducted within their blooming periods.

Only those species that have a high or low potential for occurrence are discussed further. **Table BIO-2** summarizes the special status species with the potential to occur within the repair sites.

TABLE BIO-2
REGIONALLY OCCURRING FEDERAL AND STATE-LISTED SPECIES WITH THE POTENTIAL TO OCCUR AT THE REPAIR SITES

Scientific Name	Common Name	Listing Status: Federal/State/ Other	Habitat Description	Potential for Occurrence within the Repair Sites
Amphibians				
Ambystoma californiense	California tiger salamander	FT/ST	Found in vernal pools, ephemeral wetlands, and seasonal ponds, including constructed stock ponds, in grassland and oak savannah plant communities from 3 to 1,054 meters.	**None**. The repair sites do not provide habitat for this species.
Rana boylii	Foothill yellow-legged frog	--/CT, CSC	Found in partially shaded, permanent, slow-moving streams or channels with rocky or muddy bottoms and open, sunny banks within chaparral, open woodland, and forest.	**Low**. Species depends on gravel bars and backwater pools which the reach in Butte Creek (Site 79) lacks due to confinement of levees.
Rana draytonii	California red-legged frog	FT/CSC	Found in permanent and temporary pools of streams, marshes, and ponds with dense grassy and/or shrubby vegetation from 0 to 1,500 meters.	**None**. The repair sites occur outside of the extant geographic range for this species.
Birds				
Agelaius tricolor	Tricolored blackbird	--/CE, CSC	Highly colonial species, most numerous in central valley and vicinity. Nests in dense blackberry, cattail, tules, bulrushes, sedges, willow, or wild rose within freshwater marshes. Nests in large colonies (up to thousands of individuals).	**Low**. The grassland and agricultural land within the repair sites provide foraging habitat; however, the repair sites do not provide suitable nesting habitat for this species.
Buteo swainsoni	Swainson's hawk	--/ST	Breeds in grasslands with scattered trees, juniper-sage flats, riparian sites, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging sites such as grasslands, or alfalfa or grain fields supporting rodent populations.	**High**. Trees within riparian habitat provide suitable nesting habitat for this species. Suitable foraging habitat for this species consists of five acres or more of annual grassland or suitable agricultural cropland (e.g., alfalfa). The repair sites do not provide suitable foraging habitat for this species since the repair sites are predominately disturbed sites less than 5 acres in size.
Charadrius alexandrinus nivosus	Western snowy plover	FT/CSC	Ground nesting bird found primarily on unvegetated to sparsely vegetated playas, salt flats, and sand dunes on coastal beaches, dry mud or salt flats, and sandy shores of rivers, lakes, and ponds.	**None**. The repair sites do not provide habitat for this species. The repair sites do not provide habitat for this species.
Coccyzus americanus occidentalis	Western yellow-billed cuckoo	FT/SE	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in dense riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	**Low**. Dense riparian sites in the vicinity certain repair sites provide habitat for this species.

TABLE BIO-2
REGIONALLY OCCURRING FEDERAL AND STATE-LISTED SPECIES WITH THE POTENTIAL TO OCCUR AT THE REPAIR SITES

Scientific Name	Common Name	Listing Status: Federal/State/ Other	Habitat Description	Potential for Occurrence within the Repair Sites
Birds (cont.)				
Laterallus jamaicensis coturniculus	California black rail	--/ST, FP	Inhabits saltwater, brackish, and freshwater marshes. Nests in high portions of salt marshes, shallow freshwater marshes, wet meadows, and flooded grassy vegetation.	**None**. The repair sites do not provide nesting habitat for this species.
Riparia riparia	Bank swallow	--/ST	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig a nesting hole.	**Low**. The repair areas do not provide nesting habitat for this species, however, riparian areas in the vicinity of the repair areas could provide nesting habitat.
Strix occidentalis caurina	Northern spotted owl	FT/ST	In northwestern California, nest and roost sites had more old-growth and mature forest and were less fragmented than were random sites. Nests on broken tree top, cliff ledge, in natural tree cavity, or in tree on stick platform, often the abandoned nest of hawk or mammal; sometimes in cavities.	**None**. The repair sites do not provide nesting habitat and occur outside of the known geographic range for this species.
Vireo bellii pusillus	Least Bell's vireo	FE/SE	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 feet. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, *Baccharis* sp., and mesquite. Extirpated from the Central Valley.	**None**. The repair sites do not provide habitat for this species.
Fish				
Acipenser medirostris	North American green sturgeon – Southern DPS	FT/CSC	Adults found in coastal waters from Canada to Mexico. Requires cold, freshwater streams for spawning; rears and/or forages in rivers, tributaries, and Delta.	**Low**. Enter freshwater rivers from Canada south to the Sacramento River only to spawn—March to July. Most likely occur during migratory periods; however, can be present year-around rearing and foraging.
Hypomesus transpacificus	Delta smelt	FT/SE	Open surface waters in the Sacramento/San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. May be affected by downstream sedimentation.	**Low**. The waters adjacent to multiple repair sites have the potential to have these species, most likely to occur during spawning months.

TABLE BIO-2
REGIONALLY OCCURRING FEDERAL AND STATE-LISTED SPECIES WITH THE POTENTIAL TO OCCUR AT THE REPAIR SITES

Scientific Name	Common Name	Listing Status: Federal/State/ Other	Habitat Description	Potential for Occurrence within the Repair Sites
Fish (cont.)				
Oncorhynchus mykiss irideus pop. 11	Central Valley DPS steelhead	FT/--	This ESU enters the Sacramento and San Joaquin Rivers and their tributaries from July to May; spawning from December to April. Young move to rearing areas in and through the Sacramento and San Joaquin Rivers, Delta, and San Pablo and San Francisco Bays. Spawning in tributaries to the Sacramento River below Keswick Dam.	**Low**. Spawning occurs from December-March in upper watershed streams with cool, well-oxygenated water. Juveniles likely utilize the edges of rivers and sloughs for foraging and rearing as they emigrate, during late winter and early spring (March through June).
Oncorhynchus tshawytscha pop. 7	Chinook salmon - Sacramento River winter-run ESU	FT/SE	Anadromous species using riverine, estuarine, and saltwater habitat. Spawning occurs primarily from late-April to early-August, with peak activity occurring in May and June in the Sacramento River reach between Keswick Dam and the Red Bluff Diversion Dam.	**Low**. Within the Delta, winter-run adults begin to move through the system in early winter (November–December). Waterways in the vicinity of the Project area are used by adults and juveniles as a migration corridor. Juveniles likely utilize the edges of rivers and sloughs for foraging and rearing as they emigrate, during winter and early spring.
Oncorhynchus tshawytscha pop. 6	Chinook salmon - Central Valley spring-run ESU	FT/ST	Anadromous species using riverine, estuarine, and saltwater habitat. Remnant, nonsustaining runs in Cottonwood, Battle, Antelope, and Big Chico creeks; sizable, consistent runs of naturally produced fish are found only in Mill and Deer creeks (Tehama County). The Feather River Fish Hatchery sustains the spring-run population on the Feather River. Adult migration potentially occurs from March through May. Juvenile outmigration occurs from November through April.	**Low**. Waterways in the vicinity of the project area are used by adults and juveniles as a migration corridor. Juveniles likely utilize the edges of rivers and sloughs for foraging and rearing as they emigrate, during late fall and winter.
Oncorhynchus tshawytscha	Chinook salmon – Central Valley fall/late fall-run ESU	--/CSC	Freshwater migration and spawning throughout Central Valley main river systems. Adults enter the Sacramento and San Joaquin river systems from September through January and spawn from October through February. In general, San Joaquin River populations tend to mature at an earlier age and spawn later in the year than Sacramento River populations.	**Low**. Adults primarily pass through the project vicinity on their way to spawn in upstream tributaries, primarily October through December. Juveniles, particularly in the fry stage, may rear in the Delta and Suisun Bay, foraging along channel and shoreline margins and lower velocity backwater habitats during late winter (fry) through early spring (smolts).

TABLE BIO-2
REGIONALLY OCCURRING FEDERAL AND STATE-LISTED SPECIES WITH THE POTENTIAL TO OCCUR AT THE REPAIR SITES

Scientific Name	Common Name	Listing Status: Federal/State/ Other	Habitat Description	Potential for Occurrence within the Repair Sites
Fish (cont.)				
Spirinchus thaleichthys	Longfin smelt	FC/ST,CSC	Euryhaline, nektonic and anadromous fish found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.	**Low**. Known to occur in the vicinity of multiple repair sites. Most likely to be present in the water adjacent to these sites during fall and winter months.
Invertebrates				
Branchinecta conservatio	Conservancy fairy shrimp	FE/--	Inhabits large vernal pools and wetlands within valley and foothill grassland.	**None**. The repair sites do not provide habitat for this species.
Branchinecta lynchi	Vernal pool fairy shrimp	FT/--	Endemic to the grasslands of the central valley, central coast mountains, and south coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	**None**. The repair sites do not provide habitat for this species.
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	FT/--	Occurs only in the Central Valley of California, in association with blue elderberry (*Sambucus nigra* ssp. *caerulea*) stems at least one inch in diameter at ground level.	**High**. The repair sites provide suitable habitat within the elderberry shrubs.
Lepidurus packardi	Vernal pool tadpole shrimp	FE/--	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	**None**. The repair sites do not provide habitat for this species.
Mammals				
Neotoma fuscipes riparia	Riparian woodrat - San Joaquin Valley	FT/CSC	Found in densely wooded riparian habitat. Only known extant population is restricted to about 250 acres of riparian forest on the Stanislaus River in Caswell Memorial State Park.	**None**. The repair sites occur outside of the known extant geographic range for this species.
Sylvilagus bachmani riparius	Riparian brush rabbit	FE/SE	Found in riparian forest with a dense shrub layer of thickets including wild rose, willow, and blackberry. Currently known only from Caswell Memorial State Park. Extirpated from the Sacramento-San Joaquin Delta.	**None**. The repair sites occur outside of the known extant geographic range for this species.
Vulpes macrotis mutica	San Joaquin kit fox	FE/ST	Inhabits alkali sink, valley grassland, and woodland, in valleys and adjacent gentle foothills. Multiple underground dens in dry soils are used throughout the year.	**None.** The repair sites do not provide habitat for this species.

TABLE BIO-2
REGIONALLY OCCURRING FEDERAL AND STATE-LISTED SPECIES WITH THE POTENTIAL TO OCCUR AT THE REPAIR SITES

Scientific Name	Common Name	Listing Status: Federal/State/ Other	Habitat Description	Potential for Occurrence within the Repair Sites
Reptiles				
Thamnophis gigas	Giant garter snake	FT/ST	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches.	**High.** Some repair sites provide habitat within the riverine and/or within the adjacent upland riparian habitat.
Plants				
Chloropyron palmatum	Palmate-bracted bird's-beak	FE/SE	Hemiparasitic annual herb found on alkaline substrate in chenopod scrub and valley and foothill grassland from 5 to 155 meters. Blooms May through October.	**None**. While the grassland provides marginally suitable habitat given the lack of alkaline soils, this species was not observed during the October 2018 biological surveys conducted within the evident and identifiable blooming period.
Eryngium racemosum	Delta button-celery	--/SE	Annual to perennial herb found occasionally on vernally mesic clay depressions, from 3 to 30 meters. Blooms June through October.	**None**. While the riverine and riparian provide suitable habitat, this species was not observed during the October 2018 biological surveys conducted within the evident and identifiable blooming period.
Lilaeopsis masonii	Mason's lilaeopsis	--/SR	Rhizomatous herb found in marshes and swamps, that are occasionally brackish or freshwater, and riparian scrub from 0 to 10 meters. Blooms April through November.	**None**. While the riverine and riparian provide suitable habitat, this species was not observed during the October 2018 biological surveys conducted within the evident and identifiable blooming period.
Limnanthes floccosa ssp. *californica*	Butte County meadowfoam	FE/SE	Annual herb found in vernal pools and adjacent valley and foothill grassland, which is occasionally mesic, from 46 to 930 meters. Blooms March through May.	**None.** The repair sites do not provide habitat for this species.
Tuctoria greenei	Greene's tuctoria	FE/SR	Annual herb found in vernal pools from 30 to 1,070 meters. Blooms May through September.	**None.** The repair sites do not provide habitat for this species.

KEY:
Federal: (USFWS)
FE = Listed as Endangered by the Federal Government
FT = Listed as Threatened by the Federal Government
FC = Candidate for listing by the Federal Government
(PD) = Proposed for Delisting

State: (CDFW)
SE = Listed as Endangered by the State of California
ST = Listed as Threatened by the State of California
SR = Listed as Rare by the State of California (plants only)
CT = Candidate for listing by the State of California
CSC = California Species of Special Concern
FP = CDFW Fully Protected Species

SOURCES: CDFW 2018, CNPS 2018, and USFWS 2018.

Discussion

a) **Less than Significant with Mitigation Incorporated.** Discussion of impacts to special-status species are provided below, organized by species and species groups.

Special-Status Fish

No construction-related impacts to fish would occur in Yankee Slough (site 54 in phase 4), Yolo Bypass (site 42 in phase 4), and Elder Creek (site 76 in phase 5) due to the lack of suitable habitat during the construction period.

The Sacramento River (sites 44 and 48 in phase 4 and sites 58-61, 63, 65, 67 in phase 5), Elk Slough (sites 49-53 in phase 4), the San Joaquin River (site 55 in phase 4 and sites 62, 69, and 70 in phase 5), Georgiana Slough (site 77 in phase 5), and Old River (sites 71-74 in phase 5) provide habitat for all races/ESUs of Chinook salmon, steelhead, green sturgeon, delta smelt, and longfin smelt. Butte Creek (site 79 in phase 5) provides habitat for Central Valley spring-run Chinook salmon and steelhead. Construction associated with increased sedimentation, removal of riparian vegetation, and input of hazardous materials could result in direct take, in disruption of migration or behavioral patterns, or in loss of overhead and instream cover resulting in significant impacts. Implementation of the environmental commitments identified within Section 2.4.5, including providing crew members environmental awareness training, marking work area limits, installing erosion control materials that minimize soil or sediment for entering waterways, limiting instream work windows by fish species and repair area would help to avoid and minimize effects on fish species during construction by educating workers and limiting the construction area and instream effects to periods where fish species are not present.

Further, additional environmental commitments identified within Section 2.4.5 also require DWR to secure SRA (salmonids) and shallow water habitat (smelt) credits at a NMFS-, USFWS-, and CDFW-approved mitigation bank for permanent impacts at repair sites as ordered in regulatory permits. Combined, the environmental commitments, including compensatory mitigation, would reduce long-term impacts associated with habitat degradation or loss to these species to less-than-significant levels.

Nesting Birds, including Western Yellow-billed Cuckoo, Swainson's Hawk, Bank Swallow, Yellow Warbler, Purple Martin, Song Sparrow, Loggerhead Shrike, Yellow-breasted Chat, American Peregrine Falcon, and White-tailed Kite

Migratory birds and other birds of prey may nest within and in the vicinity of the repair sites. The generally accepted nesting season extends from February 1 through September 15 for nesting birds excluding Swainson's hawk. The nesting season for Swainson's hawk extends from March 1 through September 15. Construction activities including removal of riparian vegetation and nest trees occurring within the nesting season could result in take of an active nest, nest abandonment, or disruption of foraging or nesting behavior, resulting in potential significant impacts. Implementation of the environmental commitments identified within Section 2.4.5, including conducting preconstruction

surveys and implementing appropriate avoidance buffers would help to avoid and minimize effects on nesting birds, thereby reducing impacts to *less than significant*.

Burrowing Owl

Burrowing owl has the potential to nest and overwinter within the annual grassland, agricultural land, and ruderal/disturbed areas within the repair sites. Construction activities could result in disturbance and/or death to burrowing owl, resulting in potentially significant impacts. Implementation of the environmental commitments identified within Section 2.4.5, including conducting preconstruction surveys in addition to implementation of BIO MM-1, would reduce the potential for impacts on this species to less than significant.

> **Mitigation Measure BIO-1:** If the biologist observes an occupied burrow during the preconstruction survey (as identified under Section 2.4.5), a minimum 600-foot buffer shall be established during work between April 1 and October 15 and a 150-foot buffer shall be established during work between October 15 and March 31.

Valley Elderberry Longhorn Beetle (VELB)

Elderberry shrubs, which are sole hosts for the valley elderberry longhorn beetle, are found along levees and in riparian habitats throughout the repair sites, staging, and laydown areas and in proximity to these areas. The phase 4 repair sites within Elk Slough (49, 50, 51, and 52) contain elderberry shrubs. The phase 5 repair sites within the San Joaquin River (69) and Old River (71, 72, and 74) contain habitat. No exit holes were observed within the elderberry shrubs.

VELB are assumed to be present in elderberry shrubs with stems one inch or greater in diameter at ground level (dgl). Although no elderberry shrubs are proposed for removal, any unanticipated removal during vegetation clearing and grading would impact valley elderberry longhorn beetle through direct take. Valley elderberry longhorn beetle may be indirectly impacted through noise, vibration, and the accumulation of dust on elderberry foliage. Implementation of the environmental commitments identified within Section 2.4.5 and 2.5, including flagging and placing protective fencing around the shrubs or by purchasing compensatory mitigation credits from a USFWS-approved bank in the unanticipated event that a protected shrub is removed or damaged as a result of the proposed project, would help to avoid and minimize effects on VELB and reduce impacts on this species to *less than significant*.

Special-Status Bats including Pallid Bat, Western Mastiff Bat, and Western Red Bat

Special-status bats have the potential to roost in trees within the repair sites. No trees are currently proposed for removal. However, if, during construction, it is determined that trees are required to be removed, impacts to roosting bats could occur through direct take, if present within the trees during the removal. This would be a significant impact. The following mitigation measures shall be implemented to reduce impacts to special-status bats to less than significant.

Mitigation Measure BIO-2: Within 24 hours prior to tree removal, a qualified biologist shall conduct a survey of all trees proposed for removal. If no special-status bats are observed within the trees, no additional mitigation is required for bats so long as the trees are removed within 24 hours of the survey. If the tree removal lapses for more than 24 hours, an additional survey is required.

Mitigation Measure BIO-3: If a bat is observed within a tree proposed for removal, the removal shall be halted and a minimum 20-foot buffer would be established around the tree. Through coordination with the CDFW, methods shall be established and implemented to exclude the bats from roosting in the tree. No tree removal would occur until the biologist determines that the tree is no longer occupied by the bats.

American Badger

American badger has the potential to den within the agricultural land and annual grassland within the repair sites. Construction activities including vegetation removal, grading activities, and spoils placement could impact an American badger or its den, if present within the footprint. This could be a significant impact. The following mitigation measures shall be implemented to reduce impacts to American badger to less than significant.

Mitigation Measure BIO-4: A qualified biologist shall conduct a preconstruction survey for active dens within 3 days prior to the start of vegetation clearing and grading activities in repair sites containing agricultural land, annual grassland, and ruderal/disturbed sites. If no active dens are observed, no additional measures are required so long as construction activities commence within 3 days of the survey. If construction activities lapse for more than 3 days, an additional survey would be required.

Mitigation Measure BIO-5: If active American badger dens are found, the biologist shall establish a minimum 20-foot buffer using flagging and shall be onsite to monitor all vegetation clearing and grading activities for the purpose of temporarily halting construction activities until the biologist determines that the badger has left the construction footprint on its own accord.

Western Pond Turtle

Western pond turtle could utilize aquatic areas for breeding and foraging and the adjacent annual grassland and agricultural land for upland nesting and overwintering habitat within the repair sites. Construction activities including instream work, vegetation removal, and grading activities could impact western pond turtle through direct take if present during these activities, resulting in a potentially significant impact. Implementation of the environmental commitments identified within Section 2.4.5, including conducting work during the western pond turtle's active season, having a biological monitor onsite or on-call during all activities within 200 feet of suitable aquatic habitat, and stopping work within 200 feet of a turtle, if observed, until the turtle leaves on its own accord, or until the biological relocates the turtle to suitable habitat downstream following authorization from the CDFW would help to avoid and minimize effects on westerns pond turtle and would reduce the impacts on this species to less than significant.

Giant Garter Snake

GGS could occur within aquatic and adjacent upland habitat at repair area site numbers 54 in phase 4 and 77 and 79 in phase 5. While with the Sacramento River and San Joaquin River does not provide suitable aquatic habitat, GGS are documented to occur in habitat in the vicinity of repair area site numbers 44 in phase 4 and 60, 62, 69, and 70 in phase 5. Although the Yolo Bypass provides aquatic and upland habitat, repair area site number 42 in phase 4 occurs entirely in upland, disturbed areas.

If suitable aquatic habitat occurs at or near a repair area, impacts to GGS may include temporary fill of areas that support GGS as a result of construction of temporary access roads or staging areas and obstruction of snake movement. Construction of levee repairs could result in injury or mortality of individuals due to crushing by equipment; however, this is likely to be avoided and minimized because construction activities would occur during the time period when snakes are active and should be able to move out of harm's way.

Other direct impacts may include the removal of basking sites necessary for thermoregulation and the destruction of burrows or crevices that provide hibernacula. Individual snakes could be killed or hurt by moving construction equipment and personnel. Construction disturbance also may cause GGS to move into open areas such as roads or cleared areas where they have a greater chance of being killed by vehicles or predation. Temporary impacts that may occur on the landside of project levees due to staging and hauling are likely to be avoided or minimized because repair sites occur along established project levees where existing roads and disturbed areas may be used for temporary disturbances. These activities and conditions could result in potentially significant impacts.

Although changes in channel configuration and potential changes in bank substrate size and shoreline aquatic vegetation as a result of the repairs may restrict movement and remove cover and foraging habitat, permanent impacts associated with the waterside erosion repairs would generally be restricted to steep slopes along the waterside of project levees where conditions typically are not (or less) suitable for GGS. Further, all affected GGS aquatic and adjacent upland habitat shall be restored in accordance with criteria listed in the USFWS Mitigation Criteria for Restoration and/or Replacement of Giant Garter snake Habitat (Appendix A to *Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Projects with Relatively Small Effects on the Giant Gartersnake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, and Yolo Counties, California* [USFWS 1997]), or the most current criteria provided by USFWS and/or CDFW (see Section 3.3), to the extent feasible. Any areas that cannot be restored, impacts would be compensated for through the purchase of compensatory mitigation credits from an USFWS- and CDFW-approved bank at a ratio determined in consultation with USFWS and CDFW.

Therefore, implementation of the environmental commitments identified within Section 2.4.2, establishment of buffers, monitoring and potentially capturing and removing GGS

if they are found in the work areas, implementing equipment controls, and the aforementioned compensatory mitigation, would reduce the impacts on this species to less than significant.

Foothill Yellow-legged Frog

Foothill yellow-legged frog has the potential to occur within Butte Creek (repair site 79 in phase 5). Construction activities including instream work and removal of adjacent riparian vegetation could adversely affect this species through direct take, if present within Butte Creek, resulting in a potentially significant impact. The following mitigation measures would be implemented to reduce impacts to foothill yellow-legged frog to *less than significant*.

> **Mitigation Measure BIO-6:** Within 3 days prior to entering or working near stream/riparian habitat within the foothill yellow-legged frog range, a qualified biologist shall conduct a survey in aquatic habitat and adjacent riparian habitat within the repair area and a 500-foot buffer upstream and downstream of the repair area.
>
> **Mitigation Measure BIO-7:** If foothill yellow-legged frogs are observed in the repair area, DWR will stop work in the immediate area until the frog is out of the area and will notify a qualified biologist immediately. If possible, the frog will be allowed to leave on its own, and the qualified biologist will remain in the area until the biologist deems his or her presence is no longer necessary to ensure that the frog is not harmed. If the frog does not leave the work area on its own volition, CDFW would be consulted to identify next steps.
>
> **Mitigation Measure BIO-8:** A qualified biologist will be onsite to monitor all locations where repairs will occur within aquatic habitat where the frog has the potential to occur or was observed during the preconstruction survey.

Special-Status Plants

No state or federal listed plants occur or have the potential to occur within the repair sites. Several non-listed special-status plants occur or have the potential to occur within the repair sites. While Northern California black walnut occurs within some of the repair sites, impacts to this species are addressed above as a part of the discussion of riparian impacts.

Pappose tarplant occurs adjacent to the staging area for repair site 42. These species and Ferris' milk-vetch, alkali milk-vetch, big tarplant, watershield, bristly sedge, Bolander's water-hemlock, slough thistle, dwarf downingia, adobe-lily, woolly rose-mallow, Heckard's pepper-grass, Delta mudwort, Ahart's paronychia, side-flowering skullcap, Wright's trichocoronis, and saline clover have the potential to occur within the repair sites containing suitable habitat. The proposed project could impact these species, if present, through vegetation clearing and grading activities, resulting in a potentially significant impact. Implementation of the environmental commitments identified within Section 2.4.5, including conducting surveys in suitable habitat, if present, mapping and quantifying special-status plants, and establishing avoidance and minimization measures

if found (including no-disturbance buffers, installing silt or construction fencing around populations), and providing a biological monitor in areas, if necessary, or if avoidance is infeasible, coordinating with CDFW or USFWS to develop appropriate minimization measures would help to avoid and minimize impacts on special-status plant species, thereby reducing potential impacts on special-status plants to *less than significant*.

b) **Less-than-Significant Impact.** Riparian habitats are generally considered sensitive as they provide cover and foraging opportunities for wildlife species. Sensitive natural communities are land cover types that are especially diverse, regionally uncommon, or of special concern to federal, State, and/or local agencies. Riparian habitat occurs within several of the repair sites. Construction activities associated with vegetation removal would remove riparian habitat, resulting in a potentially significant impact on this habitat. Implementation of the environmental commitments identified within Section 2.4, including restoring riparian habitat at an adjacent offsite or onsite location by planting native trees and shrubs at a ratio determined in consultation with CDFW and/or NMFS, would ensure restoration and replacement of riparian habitat lost during repairs, thereby reducing impacts on this habitat to less than significant.

c) **Less-than-Significant Impact.** The proposed project repairs would occur partially within waters of the U.S. and/or jurisdictional wetlands, resulting in potentially significant impacts. Any waters of the U.S. or jurisdictional wetlands that would be lost or disturbed shall be replaced or rehabilitated on a "no-net-loss" basis in accordance with the USACE's mitigation guidelines through the Section 404 permit process. Habitat restoration, rehabilitation, and/or replacement should be at a location and by methods acceptable to the USACE. Therefore, compliance with theses mandatory methods would reduce impacts on waters of the U.S. to less than significant.

d) **Less-than-Significant Impact.** Impacts to riparian habitat along some areas of the waterways may disrupt terrestrial wildlife movement. These areas are small segments of the riparian corridor and the duration of work is limited to no more than 3 weeks per repair area. Impacts to the waterways could also temporarily impact fish movement. Thus, the proposed project repairs could result in potentially significant impacts one the movement of wildlife. However, implementation of the environmental commitments identified within Section 2.4, including restoring riparian habitat at an adjacent offsite or onsite location, securing native riparian habitat credits or acres at a mitigation bank, installing erosion control materials that minimize soil or sediment for entering waterways, limiting instream work windows by fish species and repair area, and by securing shallow water habitat (smelt) credits at a USFWS- and CDFW-approved mitigation bank for permanent impacts at the repair area would avoid, minimize, and restore impacts on wildlife passage areas, thereby reducing impacts to less than significant.

e) **Less-than-Significant Impact.** To the extent feasible, the proposed project would comply with applicable adopted city and county ordinances protecting native and heritage trees. If native or heritage trees need to be removed for public safety, or to meet other

objectives, DWR, to the extent feasible, will implement the mitigation measures required by the ordinance that applies to the affected tree. The criteria used to define protected trees vary by local jurisdiction, but typical criteria include the tree's species (e.g., native species of oak, sycamore) and the tree's size, as defined by the tree's dbh or similar methodology. Protected trees in these locations may be removed to improve levee visibility and accessibility, or they may be removed because they pose an unacceptable threat to levee integrity. They also may be removed when stability berms are constructed next to levees or as needed to facilitate other maintenance actions (e.g., those related to providing equipment access, constructing haul routes, and performing similar activities). In general, State agencies such as DWR are not subject to local ordinances; however, to the extent feasible maintenance activities will incorporate the goals of local tree protection ordinances, which are conceptually consistent with DWR's Environmental Stewardship Policy. The implementation of environmental commitments identified within Section 2.4 would reduce impacts on heritage trees, native oaks, and other trees protected by local tree preservation ordinances or local policies to less than significant by applying a sequence of education, avoidance, minimization, monitoring by a qualified biologist when needed; water quality protection measures would be implemented; and when avoidance of wetlands or riparian habitat would not be feasible, DWR, to the extent feasible, will implement the mitigation measures required by the ordinance that applies to the affected tree, thereby reducing impacts to less than significant.

f) **No Impact.** The proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan, and there would be no impact.

References

Hays, D. W., K. R. McAllister, S. A. Richardson, and D. W. Stinson. 1999. *Washington state recovery plan for the western pond turtle.* Wash. Dept. Fish and Wild., Olympia. 66 pp.

Spinks, P. Q., Pauly, G. B., Crayon, J. J., Shaffer, H. B. 2003. Survival of the western pond turtle (*Emys marmorata*) in an urban California environment. *Biological Conservation* 113 (257-267).

U.S. Fish and Wildlife Service (USFWS). 1999. *Draft Recovery Plan for the Giant gartersnake (*Thamnopsis gigas*)*. U.S. Fish and Wildlife Service, Portland, Oregon.

U.S. Fish and Wildlife Service (USFWS). 2017. *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)*. U.S. Fish and Wildlife Service; Sacramento, California. 28 pp.

3.2.5 Cultural Resources

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

Environmental Setting

This section provides a discussion of the existing conditions, as well as relevant prehistoric and historical conditions, related to cultural resources at the repair sites (including roads and laydown areas) as well as the immediately surrounding area. Information in this section is based on the *2019 Storm Damage DWR Rehabilitation – Phases 4 and 5 Repair Sites: Cultural Resources Technical Report* (ESA 2019) prepared for the proposed project. Cultural resources include architectural resources, archaeological resources, and human remains. Paleontological resources include fossilized remains of vertebrate and invertebrate organisms, fossil tracks, and plant fossils. The following provides a broad overview of the cultural resources setting in and adjacent to the proposed project repair sites.

Prehistoric Context

Categorizing the prehistoric period into cultural stages allows researchers to describe a broad range of archaeological resources with similar cultural patterns and components during a given timeframe, thereby creating a regional chronology. Rosenthal et al. (2007) provide a framework for the interpretation of the Central Valley prehistoric record and have divided human history in the region into three basic periods: *Paleo-Indian* (13,550 to 10,550 BP), *Archaic* (10,550 to 900 BP), and *Emergent* (900 to 300 BP). The Archaic period is subdivided into three sub-periods: *Lower Archaic* (10,550 to 7,550 BP), *Middle Archaic* (7,550 to 2,550 BP), and *Upper Archaic* (2,550 to 900 BP) (Rosenthal et al. 2007). Economic patterns, stylistic aspects, and regional phases further subdivide cultural patterns into shorter phases. This scheme uses economic and technological types, socio-politics, trade networks, population density, and variations of artifact types to differentiate between cultural periods.

The Paleo-Indian Period is poorly represented in the archaeological record for Central California. Erosion or sediment deposits have either removed this component from the surface or has deeply buried it. The most conclusive evidence comes in the shape of basally thinned and fluted projectile points found in the mid and southern San Joaquin Valley; a single fluted point has been recovered from the Sacramento Valley While the dearth of artifacts presents minimal opportunities for interpretation, the early cultures seem to be focused on big game hunting and plant foraging, with milling equipment absent. The sites from this time period have been found exclusively on relict exposed Pleistocene landforms (Rosenthal et al. 2007:151).

The Lower Archaic is likewise poorly represented, a result of the mid-Holocene Altithermal that took place at the end of this period, a time of extreme drought and, initially, landform instability that, like the Pleistocene/Holocene transition, resulted in the burial of much of the habitable landscape. Isolated finds of stone crescents and stemmed points have been found alongside Paleo-Indian points along the Pleistocene shorelines of Lake Tulare at the southern end of the Central Valley. A single intact deposit from Kern County has yielded a small but diverse faunal assemblage, with waterfowl, fish, fresh water mussel, and artiodactyl. The size and form of the recovered projectile points from Lower Archaic sites suggest a continued reliance on big game. Studies in the Sierra Nevada and Coast range foothills along the valley margin have begun to identify robust milling equipment assemblages that point towards a reliance on large nut gathering and processing. Trade corridors appear to be well established by this time, with marine shell beads dating to this time period found in the great Basin and non-local obsidian found in several Lower Archaic sites (Rosenthal et al. 2007:151-152).

The Middle Archaic is marked by the onset of the mid-Holocene Altithermal. Drought led to western lakes drying up, while global warmer weather was followed by ice melt and sea level rise backing water into the Delta region, creating a substantially more robust riparian environment. Landforms stabilized and much of the Middle Holocene archaeological record has been recovered from these stable surfaces buried by late Holocene alluvial deposits. Two distinct settlement-subsistence adaptations have been identified, a valley cultural tradition and a foothill tradition. The Valley tradition is characterized by extended residential settlements with specialized tool assemblages, including fishing gear, non-utilitarian items, and trade goods. Faunal assemblages reflect year-round occupation, and the advent of mortar and pestle reflect acorn and pine-nut processing. The Foothill Tradition is better represented that than the Valley Tradition, with sites from this time comparatively common. An emphasis on cobble tools and grinding implements indicate a focus on acorn and pine-nut processing. The non-utilitarian and trade items are generally absent and the sites tend to represent mobility as opposed to the year-round occupation seen on the valley floor. The projectile point styles are represented by leaf, narrow concave-based and corner-notched points crafted from local toolstone (Rosenthal et al. 2007:152-155).

The Upper Archaic marks a time of a cooler, wetter, more stable environment. Archaeological sites were more abundant, and reflect regional variations in burial postures and artifact styles, indicating distinct geopolitical units across a broad landscape. New types of bone tools, ornaments, ceremonial items, and shell beads were invented. Obsidian trade and use played an important role in Upper Archaic communities and community-level subsistence strategies—mass harvesting of acorn, rabbit, shellfish, and salmon have been recorded, and large mounded villages appear in the Sacramento Delta region. The foothills have yielded substantial yet still seasonally occupied villages. Differences in burial patterns and material culture continue to suggest that valley and foothill populations represented different cultures (Rosenthal et al. 2007:155-157).

The Emergent Period continued to see stable climatic conditions. Large, well-populated towns were distributed along the major river waterways. The bow and arrow were introduced, likely from Penutian-speaking proto Patwin and Wintun speakers arriving from the north. Social forms become more complex and the material and ceremonial culture diversifies further, with the introduction of new ceremonial regalia, hopper mortars, coiled basketry, and cremation instead of

burial introduced. An increased reliance on fish and plant food sources has been noted, though large mammal and other game continue to appear in the archaeological record. Local bead processing and obsidian cobble reduction, the base material for both acquired by trade, is evident. Mortar and pestle are the predominate food-processing tool.

Historic Context

Settlement of the Sacramento Valley

The earliest documented expeditions into the Sacramento River Delta were undertaken by Spanish explorers in the late 18th and early 19th centuries. Explorers aimed to colonize the region to expand Spanish sovereignty, and numerous Native Americans were enslaved in the process. Many Native groups resisted and retaliated against the Spanish, and this resulted in lengthy conflicts. These conflicts and devastating epidemics severely reduced native populations.

Alta California came under Mexican rule in 1822, and the government awarded 813 land grants throughout California between 1824 and 1846. In 1841, John Sutter was awarded the New Helvetia land grant that included 49,000 acres in the Sacramento Valley. Sutter's colony, which comprised a large number of enslaved Native Americans, cultivated the land through crop and livestock farming. Despite the seasonal flooding of the Sacramento and American rivers, Sutter's achievements attracted more and more settlers to the Sacramento Valley, and many new towns, ranches, and outposts were established during the mid-19th century. Sutter's settlement continued to grow, and this area was incorporated as the City of Sacramento in 1850.

At the outset of the Gold Rush in 1848, huge numbers of prospectors arrived in Sacramento to mine for gold in the Sierra Nevada foothills. The Delta, which was still in its natural state and was not a desirable destination for farmers or those in search of gold, provided numerous waterways to transport mining-related machinery and tools throughout the region. Many people who arrived ultimately decided not to mine for gold because they deemed it too difficult or dangerous, and they instead turned to subsistence farming and agricultural pursuits. Farms and ranches developed along the Sacramento River and throughout the Delta, and shipping food and other supplies to the mining camps proved to be highly lucrative for these farmers. With the end of the Mexican-American War in 1848, California became a territory of the United States, and two years later, on September 9, 1850, California was admitted into the Union as the 31st state.

Early History of Land Reclamation in the Delta

Settlers in the Sacramento River Delta constructed the area's first network of levees in the mid-19th century to drain and reclaim land for farming, and these early levees were expanded and widened seasonally. In 1861, the State Board of Swampland Commissioners was created to spearhead a statewide effort to handle frequent flooding of agricultural land and towns, and in 1866 the board was abolished so that counties could control reclamation efforts. Reclamation activities in the Delta during the remainder of the 19th century were dominated by the Tide Land Reclamation Co. and the Glasgow-California Land and Reclamation Co., and the workforce was comprised primarily of Chinese, Japanese, and Native American laborers. The outcome of these large-scale activities was the creation of numerous "islands" within the Delta that were defined by canals, river channels, and levees.

Since 1913, the Central Valley Flood Protection Board (formerly the California Reclamation Board) has presided over reclamation districts and levee plans throughout the state.

USACE Sacramento River Flood Control Project (1917 – 1961; SRFCP)

The following historic context is excerpted from DWR's 2017 Fremont Weir Adult Fish Passage Modification Project Cultural Resources Inventory Report's comprehensive history of regional flood control and the Project area (DWR 2017).

> The SRFCP is the core of the flood protection system along the Sacramento River and its tributaries. The SRFCP was authorized under the Flood Control Act of 1917 and by 1961, construction of all components was completed. Upon completion, the SRFCP was composed of approximately 1,000 miles of levees, five weirs (Moulton, Colusa, Tisdale, Fremont, and Sacramento), control structures (Knight's Landing Outfall Gates, Butte Slough Outfall Gates, Sutter-Butte Canal Headgate), and bypasses (Sutter and Yolo). Units of the SRFCP cross nine counties (Glenn, Colusa, Butte, Sutter, Yuba, Placer, Sacramento, Yolo, and Solano). The northwestern limit of the system is Unit 140 in Glenn County, the northeastern end is Unit 152 in Butte County and the southern end is in Sacramento County at Sherman Island (Unit 101). The system was designed so that 82% of flood discharges flow through the Yolo Bypass and only 18% in the main river channel. The northern extent of the SRFCP lies along the Sacramento River in Glenn County and includes levees along the Sacramento and Feather rivers and many tributaries down to Sherman Island at the southern end of Sacramento County. Segments of the SRFCP levees were originally constructed by local interests and were modified to United States Army Corps of Engineers [USACE] flood control standards before being incorporated into the SRFCP system. Once the levee system was finalized in 1961, the State took over the operations and maintenance in accordance with USACE regulations.

Methodology and Results

Tribal Consultation

Tribal consultation under AB52 and in accordance with DWR Tribal Policy was carried out for this project. The details and results of this consultation are discussed in Section 3.2.18, Tribal Cultural Resources of this document.

Records Search and Literature Review

An ESA archaeologist completed in-person records searches of the proposed repair sites (including laydown areas) and a 0.5 mile radius around each area, including the haul routes, at four California Historical Resources Information System (CHRIS) information centers (IC) between September 24, 2018 and October 2, 2018. The four ICs visited were the Northwest Information Center (NWIC), the North Central Information Center (NCIC), the Central California Information Center (CCaIC), and the Northeast Information Center (NEIC). The purpose of the records search was to (1) determine whether known cultural resources have been recorded within or adjacent to the proposed project repair sites; (2) assess the likelihood for unrecorded cultural resources to be present based on historical references and the distribution of nearby sites; and (3) develop a context for the identification and preliminary evaluation of cultural resources. The

ICs visited, dates visited, IC File Number, and U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps reviewed are as follows:

- **NWIC**, visited on September 24, 2018. IC File Number: 18-0621. USGS 7.5-minute topographic quadrangles reviewed: Davis, Clarksburg, Courtland, Isleton, Kirkville, Knights Landing, Rio Vista, and Sacramento West.
- **NCIC**, visited on September 25, 2018. IC File Number: SAC-18-163. USGS 7.5-minute topographic quadrangle: Clarksburg, Courtland, Florin, Isleton, and Sacramento East.
- **CCaIC**, visited on October 1, 2018. IC File Number: 10859L. USGS 7.5-minute topographic quadrangles reviewed: Lathrop, Stockton West, and Vernalis.
- **NEIC**, visited on October 2, 2018. IC File Number: W18-167. USGS 7.5-minute topographic quadrangles reviewed: Chico, Geber, Llano Seco, and Vina.

Results of the combined records searches indicate that eight (8) cultural resources are located in the proposed project repair sites, and an additional thirteen (13) cultural resources are within the 0.5 mile of the footprints of the proposed project repair sites. Seven (7) cultural resources are the levees which the proposed project proposes to rehabilitate: P-34-002143, P-52-002605, P-34-004030, P-39-004517, P-39-004857, P-39-005084 and, P-39-005085. The remaining resource within the proposed project repair sites is the shipwreck of the Clarksburg Ferry (P-57-000609) at project repair site 61 (**Table CUL-1**).

TABLE CUL-1
PREVIOUSLY RECORDED CULTURAL RESOURCES

Primary	Type	Description	Data Center	Project Sites	Distance to APE	Cult. report App. C Fig.
Phase 4						
P-6-000025	Site	Large prehistoric village and mound site with numerous burials. Includes house floors and many artifacts, and faunal remains including freshwater shellfish. Potentially destroyed and spread in agricultural field.	NWIC	44	686 feet	3
P-6-000599	Structure	Historic-era concrete irrigation canal and pump.	NWIC	44	623 feet	3
P-34-002143	Structure (Levee)	Sacramento River levee system, initially built on various islands along the river starting in 1870 and continuing through the 1880s.	NCIC	Phase 4: *44, 47, and *48 Phase 5: 58, *59, *60, *61, *63, *65, and *67	In	1, 3, 4, 5, 10, 11, 12, 14
P-34-004030	Structure (Levee)	Grand Island Levee, initially built between 1855 and 1895.	NCIC	*46, and *47[a]	In	4
P-34-004454	Site	Buried dirt landing.	NCIC	47	264 feet	4
P-39-005084	Structure (Levee)	Paradise Cut levee, initially built in the late 19th century.	CCaIC	Phase 4: *55	In	9, 13, 17

TABLE CUL-1
PREVIOUSLY RECORDED CULTURAL RESOURCES

Primary	Type	Description	Data Center	Project Sites	Distance to APE	Cult. report App. C Fig.
Phase 4 (cont.)						
P-57-000063	Site	Prehistoric mound or village site with projectile points and clay cooking balls. Potentially partially destroyed and used as agricultural soil. No burials recorded.	NCIC	48	1,214 feet	5
YOL-HRI-276	Recorded Natural Feature	The natural course of Elk Slough was recorded as historical resource due its historic use for transportation.	NWIC	50, 51, 52, and 53	Immediately Adjacent	6
Phase 5						
P-34-000096	Site	Prehistoric site mound site	NCIC	58	0.5 mile	10
P-34-000101	Site	Prehistoric site mound site	NCIC	59 and 60	1,214 feet	11
P-39-002513	Structure	Swing through steel bridge that is a minor example from a significant designer, but is otherwise not significant.	CCaIC	69 and 70	1109 feet	15
P-39-004516	Structure (Levee)	Stockton RWCF East Bank Levee, initially built in the 1850s.	CCaIC	69 and 70	319 feet	15
P-39-004517	Structure (Levee)	Stockton RWCF West Bank Levee, initially built in the 1850s.	CCaIC	69 and 70	In	15
P-39-004857	Structure (Levee)	Old River Levee system, initially built in the late 19th century.	CCaIC	71	In	16
P-39-005084	Structure (Levee)	San Joaquin River Levee,	CCaIC	62, 72, 73, and 74	In	17
P-52-000223	Site	Very large prehistoric and Historic-era Native American village and mound site, with glass beads. Site extends north by an unspecified distance, likely to the southern bank of Elder Creek (and closer to Project site). Mound is intact, and more of the site maybe.	NEIC	76	0.46 mile	18
P-52-002605	Structure (Levee)	Elder Creek Levee, initially built in 1961 by DWR.	NEIC	76	In	18
P-57-000047	Site	Prehistoric village and mound site extending from levee, with an unknown number of burials.	NWIC	63, 65, and 67	1,207 feet	14
P-57-000182	Site	The “Mississippi River Mat” is a series of pilings associated with the Sacramento River East Bank Levee. It is a contributing to the levee.	NWIC	63, 65, and 67	0.3 mile	14
P-57-000183	Site	An intact prehistoric site with midden and artifacts, and with burials.	NWIC	63, 65, and 67	0.44 mile	14
P-57-000609	Site	Clarksburg Ferry shipwreck. The ferry was active from 1920 to 1928, when it sank. The shipwreck is considered eligible for the National Register.	NWIC	61	In	12

TABLE CUL-1
PREVIOUSLY RECORDED CULTURAL RESOURCES

Primary	Type	Description	Data Center	Project Sites	Distance to APE	Cult. report App. C Fig.
Phase 5 (cont.)						
P-57-000839	District	Lisbon District is a collection of 15 pioneer era houses located along the Sacramento River.	NWIC	63, 65, and 67	0.5 mile	14
C-849	Site	Remains of Cave Landing, which is a series of tightly clustered pilings perpendicular to the Sacramento River levee.	NWIC	63, 65, and 67	0.44 mile	14

NOTES:
* These resource records were updated and extended following field work and further analysis. Record updates are in Appendix E of the technical report (ESA 2019).

Archaeological Resources

One historic-era archaeological site is located within the project APE within a Phase 5 proposed project repair site. The Clarksburg Ferry shipwreck (P-57-000609) was identified during the current study as being in the proposed project repair site 61, along with associated landing or dock remains.

An ESA archaeologist surveyed all 13 of the Phase 4 proposed project repair sites and their 11 laydown areas, including alterative locations. No new archaeological resources were identified in any of the surveyed Phase 4 proposed project repair sites or their laydown areas. All 17 Phase 5 proposed project repair sites and all 15 laydown areas were surveyed. No new archaeological resources were identified in any of the surveyed Phase 5 proposed project repair sites or their laydown areas. Only P-57-000609, a previously known site, was identified within a project repair site.

Historic Architectural Resources

All proposed project repair sites were subject to archival review and field survey by a qualified ESA architectural historian. The archival review identified ten known built environment resources within the various sites, as listed in **Table CUL-2**. Of these, two resources – the Isleton Levee Section and the Elder Creek Levee – were previously determined ineligible for listing in the National Register of Historic Places (National Register) and California Register of Historical Resources (California Register). Additionally, the field survey identified five additional resources that were not previously recorded. Unevaluated built resources documented through the course of review and survey include earthen levees dating from the early 1900s through the mid-1960s. These levees are closely associated with historic events relating to reclamation and flood control (Criteria 1/A of the California and National Registers). Additionally, the USACE, as federal lead agency charged with oversight of the levees, treats the levees as potentially eligible for listing in the National Register for their association with flood management and the development of the Central Valley. While not formally evaluated for eligibility under the National or California Registers, for the purposes of the proposed project, and following the

precedent set by USACE, these remaining 13 levee segments are treated as historical resources for the purposes of CEQA analysis

TABLE CUL-2
ELIGIBILITY OF BUILT RESOURCES WITHIN THE PROJECT FOOTPRINT

Resource	Eligibility Determination
Isleton Levee Section (P-34-002143)	Previously determined ineligible for listing in the National Register and California Register
Historic Grand Island Levee (P-34-004030)	Not evaluated as part of earlier recordation; presumed eligible for listing in the National Register and the California Register for the purposes of this Project
Paradise Cut Levee (P-39-005084)	Not evaluated as part of earlier recordation; presumed eligible for listing in the National Register and the California Register for the purposes of this Project
San Joaquin River Levee (P-39-005085)	Not evaluated as part of earlier recordation; presumed eligible for listing in the National Register and the California Register for the purposes of this Project
Stockton RWCF Western Levee Segment (P-39-004517)	Not evaluated as part of earlier recordation; presumed eligible for listing in the National Register and the California Register for the purposes of this Project
Old River Levees (P-39-004857)	Not evaluated as part of earlier recordation; presumed eligible for listing in the National Register and the California Register for the purposes of this Project
Elder Creek Levee Segment (P-52-002605)	Previously determined ineligible for listing in the National Register and California Register
Merritt Island Levee	Not previously recorded or evaluated; presumed eligible for listing in the National Register and the California Register for the purposes of this Project
Yankee Slough North Bank Levee	Not previously recorded or evaluated; presumed eligible for listing in the National Register and the California Register for the purposes of this Project
Yolo Bypass West Bank Levee	Not previously recorded or evaluated; presumed eligible for listing in the National Register and the California Register for the purposes of this Project
Tyler Island Georgiana Slough Levee	Not previously recorded or evaluated; presumed eligible for listing in the National Register and the California Register for the purposes of this Project
Butte Creek Levee	Not previously recorded or evaluated; presumed eligible for listing in the National Register and the California Register for the purposes of this Project

Discussion

a) **Less-than-Significant Impact.** CEQA Guidelines Section 15064.5 requires the lead agency to consider the effects of a project on historical resources. A historical resource is defined as any building, structure, site, or object listed in or determined to be eligible for listing in the California Register, or determined by a lead agency to be significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California. The following discussion focuses on architectural and structural resources. Archaeological resources, including archaeological resources that are potentially historical resources according to CEQA Guidelines Section 15064.5, are addressed under checklist issue b), below.

Proposed project activities involve making repairs along existing levees slopes to restore the levee back to its original design. These repairs would not result in significant physical change of the levees as a potentially eligible historical resource. As such, a less-than-significant impact to the levees as historical resources are anticipated.

b) **Less than Significant with Mitigation Incorporated.** This section discusses archaeological resources, both as historical resources according to CEQA Guidelines CEQA Guidelines Section 15064.5, as well as unique archaeological resources as defined in Public Resources Code (PRC) Section 21083.2(g). A significant impact would occur if the project would cause a substantial adverse change to an archaeological resource through physical demolition, destruction, relocation, or alteration of the resource.

Based on the IC records searches, the distribution of nearby archaeological sites, survey results, previous disturbance, and environmental context, the majority of the proposed project repair sites have a low potential to encounter or impact an archaeological site or to encounter human remains. Despite the low potential, the probability remains for the discovery and potentially significant impact on unknown archaeological resources. Potential impacts would be mitigated to a less-than-significant level through implementation of preconstruction training and a plan for the inadvertent discovery of archaeological resources (**Mitigation Measure CUL-1**).

While the majority of locations are not sensitive for containing cultural resources, a handful of locations have been determined sensitive. Known archaeological resources are near proposed project repair sites 44, 60, 61, 63, 65, 67 and 69. Tribal monitoring may be carried out where appropriate (**Mitigation Measure CUL-2**) reducing potential impacts on archeological resources to less than significant. The proposed project has the potential to impact archaeological resources at these locations. In addition, at proposed project repair sites 44, and 69, soil types, artifacts, or ambiguous faunal remains that could not be clearly identified as archaeological may still indicate a cultural resource in, or very near, the proposed project repair sites. Impacts to potential archaeological resources at proposed project repair sites 44, 60, 61, 63, 65, 67 and 69 would be reduced to a less-than-significant level with implementation of archaeological monitoring and a plan for the inadvertent discovery of archaeological resources (**Mitigation Measure CUL-3**).

There is no indication that portions of the proposed project repair sites have been used for human burials, but there are archaeological sites with burials in the vicinity of some project repair sites and there is the possibility that unmarked burials may be unearthed during ground-disturbing activities. The proposed project would involve ground-disturbing activities; therefore, it is possible that such actions could inadvertently unearth, expose, or disturb buried human remains, which would be a potentially significant impact. Implementation of **Mitigation Measure CUL-4**, which includes provisions compliant with the Public Resources Code and Health and Safety Code would reduce this impact to a less-than-significant level. These locations and other prehistoric archaeological sites may also be considered Traditional Cultural Resources by tribal groups. **Mitigation Measure CUL-5** includes provisions for Traditional Cultural Resources to reduce potential impacts to less-than-significant levels.

The possibility exists for shipwrecks to be present within the water-side toe of levees subject to repair. There is one known shipwreck within a project repair site, P-57-000609. If water-side—i.e. from a barge-- levee work will be required in the vicinity of P-57-

000609, **Mitigation Measure CUL-6** includes provisions for reducing potential impacts to these resources to a less-than-significant level, as well as a plan for the inadvertent discovery of additional submerged shipwrecks or maritime features.

Mitigation Measure CUL-1. Preconstruction Training and a Plan for Inadvertent Discovery of Archaeological Resources.

Prior to construction, a qualified archaeologist with expertise in California archaeology will develop an archaeological resources training program for all construction and field workers involved in ground-disturbing activities. Only personnel who have received cultural resource awareness and sensitivity training will be allowed to enter areas potentially containing archaeological resources. Training will include a presentation developed in coordination with affiliated tribal representatives. Topics may include the potential presence and type of Native American and non-Native American resources that might be found during operations associated with the individual flood control projects, and necessary reporting protocols. Written materials will be provided to personnel as appropriate.

While unlikely, the accidental discovery of archaeological resources or human remains at these locations cannot be entirely discounted. If prehistoric or historic-era archaeological resources are encountered, all construction activities within 100 feet will halt. DWR will be notified, and a Secretary of the Interior-qualified archaeologist will inspect the findings within 24 hours of discovery. If it is determined that the proposed project could damage a significant archaeological resource, DWR shall re-design the proposed project to avoid any adverse effects. If avoidance is not feasible, a qualified archaeologist shall prepare and implement a detailed Archaeological Resources Management Plan in consultation with the State Historic Preservation Officer and, for prehistoric resources, the appropriate Native American representative.

Mitigation Measure CUL-2. Conduct Monitoring at Locations Identified by Native Americans as Sensitive.

Native American monitoring may be conducted at sensitive locations under agreements between DWR and culturally affiliated Native American Tribes. If cultural materials are encountered during construction, Mitigation Measure CUL-2 will be implemented.

Mitigation Measure CUL-3. Archaeological Monitoring and a Plan for Inadvertent Discovery of Archaeological Resources.

Project-related activities would require ground-disturbance, including excavation, trenching, grading, and use of staging areas. Ground disturbing activities could result in damage to or destruction of known archaeological sites, if present in the construction area. However, based on the archaeological studies on file at the CHRIS that have been conducted, there are no known prehistoric or historic-era (other than the Clarksburg Ferry, addressed in CUL-6) archaeological sites on the project site.

Archaeological monitoring is necessary when ground-disturbing activities occur at the proposed project repair sites 44, 60, 61, 63, 65, 67 and 69. Monitoring shall be conducted by or supervised by a qualified archaeologist who meets the Secretary of the Interior's Qualification Standards. A Monitoring Plan shall be developed that includes (but not be limited to) the following components:

- Person(s) responsible for conducting monitoring activities;
- Person(s) responsible for overseeing and directing the monitors;
- How the monitoring shall be conducted and the required format and content of monitoring reports;
- Schedule for submittal of monitoring reports and person(s) responsible for review and approval of monitoring reports;
- Protocol for notifications in case of encountering cultural resources, as well as methods of dealing with the encountered resources (e.g., collection, identification, curation);
- Methods to ensure security of cultural resources sites;
- A protocol for notifying local authorities (i.e., Sheriff, Police) should site looting and other illegal activities occur during construction.
- During the course of the monitoring, the archaeologist may adjust the frequency—from continuous to intermittent—of the monitoring based on the conditions and professional judgment regarding the potential to impact resources.
- Contact information for all responsible personnel identified in the Plan

If an archaeological resource is encountered, all activity within 100 feet of the find shall immediately halt until it can be evaluated by a qualified archaeologist (and a Native American representative if the artifacts are prehistoric). If it is determined that project activities could damage a significant archaeological resource, DWR shall re-design the proposed project to avoid any adverse effects. If avoidance is not feasible, a qualified archaeologist shall prepare and implement a detailed Archaeological Resources Management Plan in consultation with the State Historic Preservation Officer and, for prehistoric resources, the appropriate Native American representative.

In considering any suggested mitigation proposed by the archaeologist and Native American representative, DWR shall determine whether avoidance is feasible in light of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is not feasible, other appropriate measures (e.g., data recovery as agreed upon between DWR, the archaeological consultant, and Native American representatives) shall be instituted. Work may proceed in other parts of the project site while mitigation for archaeological resources is being carried out.

Because no known prehistoric or historic-era (other than the Clarksburg Ferry, (addressed in CUL-7) archaeological sites are on file with the CHRIS are present

within the project sites, there would be no damage to or destruction of known archaeological resource locations during project construction. Therefore, there would be no impact on known prehistoric archaeological resources.

c) **Less than Significant with Mitigation Incorporated**

Mitigation Measure CUL-4. Inadvertent Discovery of Human Remains: If potential human remains are encountered, all work will halt within 100 feet of the find and the on-site construction crew will immediately contact DWR. DWR will contact the appropriate County coroner in accordance with PRC Section 5097.98 and Health and Safety Code Section 7050.5. If the coroner determines the remains are Native American, the coroner will contact the Native American Heritage Commission (NAHC). As provided in PRC Section 5097.98, the NAHC will identify the person or persons believed most likely to be descended from the deceased Native American. The most likely descendent will make recommendations for means of treating, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98.

Mitigation Measure CUL-5. In the Event that Tribal Cultural Resources or Traditional Cultural Properties are Discovered during Construction, Implement Procedures to Evaluate Tribal Cultural Resources/Traditional Cultural Properties and Implement Avoidance and Minimization Measures to Avoid Significant Adverse Effects.

California Native American Tribes that are traditionally and culturally affiliated with the geographic area in which the project is located may have expertise concerning their TCRs (California PRC Section 21080.3.1). As was done during EIS/EIR preparation, culturally affiliated Tribes will be further consulted concerning TCRs and TCPs that may be impacted. If these types of resources are discovered during construction. Further consultation with culturally affiliated Tribes will focus on identification of measures to avoid or minimize impacts on any such resources discovered during construction. Should TCRs or TCPs be identified in the project APE during construction, the following performance standards shall me met prior to continuance of construction and associated activities that may result in damage to or destruction of TCRs or TCPs:

- Each identified TCR/TCP will be evaluated for CRHR and NRHP eligibility through application of established eligibility criteria (California Code of Regulations 15064.636 and CFR Part 63 respectively), in consultation with interested Native American Tribes.

- If a TCR is determined to be eligible for listing on the NRHP, DWR will avoid damaging effects to the TCR/TCP in accordance with California PRC Section 21084.3, if feasible. If DWR determines that the project may cause a substantial adverse change to a TCR/TCP, and measures are not otherwise identified in the consultation process, the following are examples of mitigation capable of avoiding or substantially lessening potential significant impacts to a TCR/TCP or alternatives that would avoid significant impacts to a TCR/TCP. These measures may be considered to avoid or minimize significant adverse impacts and constitute the standard by which an impact conclusion of less-than significant may be reached:

- Treat the resource with culturally appropriate dignity taking into account the Tribal cultural values and meaning of the resource, including, but not limited to, the following:
  - Protect the cultural character and integrity of the resource.
  - Protect the traditional use of the resource.
  - Protect the confidentiality of the resource.
  - Protect the resource.

If a TCP is determined to be eligible for listing in the NRHP, then the procedures for determination of effect and, if adverse, treatment of the resource to resolve adverse effect will be conducted in accordance with the procedures required for compliance with Section 106 of the NHPA (36 CFR Parts 800.5–800.6).

Mitigation Measure CUL-6: Mitigation of Effects to Submerged Shipwrecks or Maritime Features

There is one known shipwreck within a project repair site on the water-side toe of the levee subject to repair, P-57-000609. Water-side levee work conducted from a barge is expected in the vicinity of P-57-000609. The resources should be avoided to avoid adverse effects. If it is determined that project activities could damage P-57-000609, DWR shall re-design the proposed project to avoid any adverse effects. If avoidance is not feasible, DWR will follow an existing an Historic Property Treatment Plan, prepared by the USACE for this resource, that will reduce the effects of the project to less than significant.

While unlikely, the accidental discovery of additional submerged shipwrecks or maritime features cannot be entirely discounted. If additional submerged shipwrecks or maritime features are encountered, all construction activities within 100 feet will halt. DWR will be notified, and a Secretary of the Interior-qualified archaeologist will inspect the findings within 24 hours of discovery. The shipwreck or maritime feature will be evaluated for CRHR and NRHP eligibility through application of established eligibility criteria (California Code of Regulations 15064.636 and CFR Part 63 respectively). If it is determined that the proposed project could damage a significant archaeological resource, DWR shall re-design the proposed project to avoid any adverse effects. If avoidance is not feasible, a qualified archaeologist shall prepare and implement a detailed Archaeological Resources Management Plan in consultation with the State Historic Preservation Officer.

References

California Department of Water Resources (DWR), 2017. *Fremont Weir Adult Fish Passage Modification Project Cultural Resources Inventory Report*.

ESA, 2018. *2017 Storm Damage DWR Rehabilitation – Phases 4 and 5 Critical Repair Sites: Cultural Resources Technical Report.* Prepared for DWR, February 2019.

Rosenthal, Jeffrey S., Gregory G. White, and Mark Q. Sutton, "The Central Valley: A View from the Catbird's Seat", In *California Prehistory: Colonization, Culture, and Complexity*, edited by Terry L. Jones and Kathryn A. Klar, pp. 147-163, AltaMira Press, Lanham, MD, 2007.

3.2.6 Energy

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

Discussion

Consistent with Public Resources Code Section 21100(b)(3), this impact analysis evaluates the potential for the Project to result in a substantial increase in energy demand and/or wasteful use of energy during Project construction, operation and maintenance, and decommissioning. The impact analysis is informed by Appendix F of the CEQA Guidelines. The potential impacts are analyzed based on an evaluation of whether construction energy use estimates for the project would be considered excessive, wasteful, or inefficient.

a) **Less-than-Significant Impact.** The analysis in this section utilizes the assumptions identified Section 3.2.3 Air Quality and Section 3.2.8 Greenhous Gases. Because the California Emissions Estimator Model (CalEEMod) program, used for those analyses, does not quantify in the output file the fuel volume or type for construction-related sources; additional calculations were completed and are summarized below.

Construction of the project would result in fuel consumption from the use of construction tools and equipment, truck trips or barge trips to haul material, and vehicle trips generated from construction workers commuting to and from the site. Project construction is expected to consume a total of approximately 383,400 gallons of diesel fuel from construction equipment and vendor, hauling, and water truck trips under the haul truck scenario or approximately 278,200 gallons of diesel from construction equipment and vendor, hauling, and barge trips under the barge hauling scenario.

Construction activities and corresponding fuel energy consumption would be temporary and localized, as the use of diesel fuel and heavy-duty equipment would not be a long-term condition of the project. In addition, there are no unusual project characteristics that would cause the use of construction equipment or haul vehicles that would be less energy efficient compared with other similar construction sites in other parts of the State. In conclusion, construction-related fuel consumption by the project would not result in inefficient, wasteful, or unnecessary energy use compared with other construction sites in the region. Due to the temporary nature of the project, there will be no long-term operational energy impacts as addressed above.

b) **Less-than-Significant Impact.** The transportation sector is a major end-user of energy in California, accounting for approximately 39 percent of total statewide energy

consumption in 2014 (USIA 2016). In addition, energy is consumed in connection with construction and maintenance of transportation infrastructure, such as streets, highways, freeways, rail lines, and airport runways. California's 30 million vehicles consume more than 16 billion gallons of gasoline and more than 3 billion gallons of diesel each year, making California the second largest consumer of gasoline in the world (CEC 2016).

With respect to transportation energy, existing energy standards are promulgated either through the regulation of fuel refineries and products, such as the Low Carbon Fuel Standard (LCFS), which mandates an 10 percent reduction in the non-biogenic carbon content of vehicle fuels by 2020. Additionally, there are other regulatory program with emissions and fuel efficiency standards established by USEPA and CARB such as Pavley II/LEV III and the Heavy-Duty (Tractor-Trailer) GHG Regulation. CARB has set a goal of 4.2 million Zero Emissions Vehicles (ZEV) on the road by the year 2030. Further, construction sites will need to comply with State requirements designed to minimize idling and associated emissions, which also minimizes use of fuel. Specifically, idling of commercial vehicles and off-road equipment would be limited to five minutes in accordance with the Commercial Motor Vehicle Idling Regulation and the Off-Road Regulation (CCR 2005). In conclusion, the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

References

California Air Resources Board (CARB), 2016, *Mobile Source Strategy*, May 2016. Available: https://www.arb.ca.gov/planning/sip/2016sip/2016mobsrc.htm. Accessed March 2019.

California Code of Regulations (CCR), 2005. Title 13, Chapter 10, 2485, updated through 2014.

California Energy Commission (CEC). 2016. Summary of California Vehicle and Transportation Energy. Available: http://www.energy.ca.gov/almanac/transportation_data/summary.html#vehicles. Accessed January 2019.

U.S. Energy Information Administration (USIA). 2016. California State Profile and Energy Estimates: Consumption by Sector. Available: http://www.eia.gov/state/?sid=CA#tabs-2. Accessed January 15, 2019.

3.2.7 Geology and Soils

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
7. GEOLOGY AND SOILS — Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

Discussion

The proposed project is located within the Great Valley Geomorphic province. The province includes the area known as the Great Central Valley of California, which extends approximately 400 miles north to south and 50 miles east to west. The northern and southern portions of the Central Valley are referred to as the Sacramento Valley and San Joaquin Valley, respectively; with the Sacramento River draining areas to the north and the San Joaquin River draining areas to the south. The Great Central Valley is encompassed by the Coast Ranges (metamorphic), the Klamath Ranges (metamorphic), the Cascade Range (volcanic) and the Sierra Nevada (granitic and metamorphic). The majority of rocks and deposits found within the province are sedimentary. According to the U.S. Geological Survey, sedimentary rocks are formed from pre-existing rocks or pieces of once living organisms. They form from deposits that accumulate on the Earth's surface. Sedimentary rocks often have distinctive layering or bedding.

The topography of the Central Valley is relatively level, with elevations ranging from a few feet to a few hundred feet above mean sea level (msl). The proposed project levee repair sites are not

located within an Alquist-Priolo Special Studies Zone and there are no underlying active earthquake faults (CDC 2018). According to the California Department of Conservation (CDC) (2016) earthquake shaking potential for California, the project sites are located in areas distant from known, active faults and will experience lower levels of shaking less frequently.

In the Sacramento Valley, rich alluvial soils predominate, supporting an extensive agricultural region. The accumulation of salts in the soils of the San Joaquin Valley is due to a combination of the regional geology, high water table, intensive irrigation and fertilization practices, and the importation of water from the Delta that is high in salinity. The dominant form of salinity in the San Joaquin Valley, sodium sulfate, adversely affects soil structure, reducing permeability and hydraulic connectivity, and further impacting plant growth.

Soils in the Delta remained saturated with water over thousands of years, allowing organic matter to accumulate faster than it could decay. These soils are typically dark and acidic because of their high organic matter content, and are usually referred to as peat. Drainage of Delta peat soils for agricultural production has allowed the decomposition process to accelerate, and in many areas the oxidation of peat soils has led to subsidence. In areas that remain saturated, peat soils can emit gases such as methane.

Liquefaction is the process where the soil is transformed to a fluid form during intense and prolonged ground shaking. Areas most prone to liquefaction are those that are water saturated and consist of relatively uniform sands that are loose to medium density. Granular layers underlying certain areas in the Sacramento Valley have higher relative densities and thus have moderate liquefaction potential. The risk of liquefaction does exist within the proposed project levee repair sites due to the presence of sandy soils.

Expansive soils are characterized by the ability to undergo significant volume change (shrink and swell) as a result of variation in soil moisture content. Soil moisture content can change due to many factors, including perched groundwater, landscape irrigation, rainfall, and utility leakage. The soils in the proposed project area have a slight to moderate swell potential.

a) i - iv **Less-than-Significant Impact.** The proposed project repair sites are not located in an Alquist-Priolo Earthquake Fault Zone, as defined by the California Geological Survey, and no active or potentially active faults exist on, or in the immediate vicinity of the levee repair sites (CDC 2018). In addition, the proposed project is located in areas known to experience infrequent and lower levels of shaking. Furthermore, the proposed project would not exacerbate seismic conditions that could expose people or structures to seismic risks or result in inducing seismically triggered landslides. Furthermore, the levee repairs would be constructed to meet current engineering specifications that meet seismic safety levels for the region. The potential for surface fault rupture, strong seismic ground shaking, seismic-related ground failure including liquefaction, and landslides would be less-than-significant.

b) **Less-than-Significant Impact.** The proposed project would involve ground-disturbing construction activities, including vegetation clearing and grubbing, excavation, and placement of rockfill and soil-filled rockfill. Ground-disturbing activities at the repair

sites would result in minor removal and storage of top soil where temporary access roads and laydown areas would be graded. However, there top soil would be replaced after repair activities and reseeded and returned to existing conditions of better, and any underlying top soil would have a low potential for erosion. Disturbed areas could be exposed to erosion caused by wind or early-season rainfall events. Effects of wind erosion are evaluated in Section 3.2.3, Air Quality and water quality effects are evaluated in Section 3.2.10, Hydrology and Water Quality. Exposure of topsoil has the potential to occur during construction of the proposed project, especially during periods of ground disturbance and vegetation removal and other activities involving heavy equipment use during maintenance activities, resulting in potentially significant impact. Therefore, DWR would implement its appropriate BMPs for water quality and compliance with regulatory permits as described in Section 2.4 of the project description to minimize erosion and loss of topsoil. Implementation of these standard BMPs would prevent erosion and loss of topsoil, and ensure that the potential impact of soil erosion or the loss of topsoil during construction is less than significant.

c, d) **No Impact.** As described previously, some of the proposed project repair sites contain soils that are known to have liquefaction potential and moderate shrink-swell potential. However, no new buildings or habitable structures would be constructed as part of the proposed project and there would be no impacts to life or property.

e) **No Impact.** The proposed project would not involve the generation of sewage or wastewater that would require onsite treatment, no septic systems or alternative wastewater disposal systems would be necessary. There would be no impact.

f) **Less-than-Significant Impact.** The proposed project would involve ground-disturbing construction activities, including vegetation clearing and grubbing, excavation, and placement of rockfill and soil-filled rockfill. Ground-disturbing activities at the repair sites would result in minor removal and storage of top soil. Excavation and removal of top soil would be of more recent deposits and engineered soil from previous construction of the levees. Further, excavations would not be deep enough to encounter soil deposits that are associated with paleontological resources. Therefore, impacts on paleontological resources would be less than significant.

References

California Department of Conservation (CDC), 2016. Earthquake Shaking Potential for California.

California Department of Conservation (CDC), 2018. Fault Activity Map of California. Available: http://maps.conservation.ca.gov/cgs/fam/. Accessed November 2, 2018.

3.2.8 Greenhouse Gas Emissions

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

Environmental Setting

Greenhouse gases (GHGs) trap heat by preventing some of the solar radiation that hits the earth from being reflected back into space. Some GHGs occur naturally and are needed to keep the earth's surface habitable. Over the past 100 years, human activities have substantially increased the concentration of GHGs in our atmosphere. This has intensified the greenhouse effect, increasing average global temperatures and resulting the climate change.

Carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) are the principal GHGs associated with land use projects. CO_2, CH_4, and N_2O occur naturally, and through human activity. Emissions of CO_2 are largely by-products of fossil fuel combustion and CH_4 results from off gassing[8] associated with agricultural practices and landfills.

CO_2 is the reference gas for climate change because it is the predominant GHG emitted. The effect that each of the aforementioned gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a pound-for-pound basis, how much a gas contributes to global warming relative to how much warming would be predicted to be caused by the same mass of CO_2. CH_4 and N_2O are substantially more potent GHGs than CO_2, with 100-year GWPs of 28 and 265 times that of CO_2, respectively.

In emissions inventories, GHG emissions are typically reported as metric tons of CO_2 equivalents (CO_2e). CO_2e are calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH_4 and N_2O have much higher GWPs than CO_2, CO_2 is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO_2e.

Approach to Analysis

The California Air Pollution Control Officers Association (CAPCOA) considers GHG impacts to be exclusively cumulative impacts (CAPCOA 2008). Therefore, assessment of significance is based on whether a project's GHG emissions represent a cumulatively considerable contribution to the global atmosphere.

8 Off-gassing is defined as the release of chemicals under normal conditions of temperature and pressure.

Each Air District have the discretion to establish significance criteria with respect to GHGs. The following summarizes the current status of each applicable air district to GHG impact assessment under CEQA.

SMAQMD: The SMAQMD has established a GHG significance threshold for construction activities of 1,100 metric tons (MT) of CO2e per year. If a project exceeds this threshold then all feasible mitigation measure shall be implemented.

YSAQMD: The YSAQMD has not formally adopted a GHG threshold relative to CEQA but routinely accepts the thresholds established by SMAQMD. Consequently, this analysis applies SMAQMD's GHG significance threshold for construction activities of 1,100 MT of CO2e per year.

FRAQMD: The FRAQMD has not formally adopted a GHG threshold relative to CEQA. Consequently, this analysis applies SMAQMD's GHG significance threshold for construction activities of 1,100 MT of CO2e per year.

CCAPCD: The CCAPCD has not formally adopted a GHG threshold relative to CEQA. Consequently, this analysis applies SMAQMD's GHG significance threshold for construction activities of 1,100 MT of CO2e per year.

SJVAPCD: The guidance and policy of SJVAPCD rely on the use of performance based standards, otherwise known as Best Performance Standards (BPS), to assess significance of project specific greenhouse gas emissions on global climate change during the environmental review process, as required by CEQA.

TCAPCD: The TCAPCD adopted a 25 percent reduction over a "Business as Usual" (or BAU) scenario as its threshold for evaluating GHG emissions under CEQA. However, the California Supreme Court questioned the use of Scoping Plan targets for individual projects without adequate explanation (*Center for Biological Diversity v. California Department of Fish and Wildlife*). Therefore, this analysis does not use demonstration of a 25 percent reduction in GHG emissions from BAU emissions. Consequently, similar to the other districts, this analysis applies SMAQMD's GHG significance threshold for construction activities of 1,100 MT of CO2e per year.

BCAPCD: The BCAPCD has not formally adopted a GHG threshold relative to CEQA. Consequently, this analysis applies SMAQMD's GHG significance threshold for construction activities of 1,100 MT) of CO2e per year.

Discussion

a) **Less-than-Significant Impact.** Construction of the proposed project would generate GHG emissions from a variety of sources, including off-road construction equipment and on-road worker, vendor, and hauling vehicles. Emissions from land-based construction emission sources were estimated using the CalEEMod emission estimator model version 2016.3.2. For the barge haul scenario, in-water emissions from barges and work boats

were calculated using emission factors generated by the Harbor, Dredge, and Barge Emission Factor Calculator of the SMAQMD. Model reports are provided in Appendix B.

Total construction-related GHG emissions were amortized over an assumed 30-year life of the project to determine emissions in terms of MT per year. As can be seen from Table GHG-1, all annualized emissions would be below the 1,100 MT per year threshold applied in this analysis. Consequently, GHG emissions would represent a less-than-significant cumulative GHG impact.

TABLE GHG-1
CONSTRUCTION GHG EMISSIONS IN EACH AIR DISTRICT FROM PROJECT SCENARIOS

Air District Jurisdiction	GHG Emissions (MT) Truck Hauling Scenario	Annualized Emissions (MT/yr) Truck Hauling Scenario	GHG Emissions (MT) Barge Hauling Scenario	Annualized Emissions (MT/yr) Barge Hauling Scenario
SMAQMD	1,449	48.3	592	19.7
YSAQMD	918	30.6	704	23.5
FRAQMD	60	2.0	NA	NA
CCAPCD	72	2.4	NA	NA
SJVAPCD	1,121	40.7	NA	NA
TCAPCD	148	4.9	NA	NA
BCAPCD	27	0.9	NA	NA

NOTES:
NA = Not applicable; these sites are not proposed as potential locations for in-water barge transport.

b) **Less than Significant with Mitigation Incorporated.** DWR in an effort to reduce its impact on the environment and lead by example, has developed a GHG Emissions Reduction Plan (GGERP) to guide its project development and decision making with respect to energy use and GHG emissions. The GGERP details the steps DWR will take to reduce its emissions by over 80% below 1990 levels. Measure CO-1 of the GGERP implements Best Management Practices (BMPs).

Based on the emissions presented in Table GHG-1, the proposed project would not be considered an "extraordinary project".[9] These thresholds represent a level of GHG emissions that by themselves could potentially adversely affect DWR's ability to achieve its GHG emissions reduction goals. Note that these construction emissions thresholds are not established as thresholds of significance for CEQA purposes, which were applied in response to question a, above.

Because the proposed project would not result in emissions that would potentially adversely affect DWR's ability to achieve its GHG emissions reduction goals, it would be

[9] An extraordinary project is defined by DWR as one that emits more than 25,000 MT CO2e in a total construction phase or 12,500 MT in a given year of construction.

considered consistent with the GGERP if it implements the applicable measures of Measure CO-1 of the GGERP. Consequently, Mitigation Measure GHG-1, below, identifies the BMP's applicable to the project to ensure consistency with the GGERP. With implementation of Mitigation Measure GHG-1, the proposed project would have a less-than-significant impact with respect to conflicts with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Mitigation Measure GHG-1: Implement DWR BMP's for Construction Practices. The following GGERP Plan BMP's shall be implemented as part of construction activities associated with the proposed project:

BMP 1. Evaluate project characteristics, including location, project work flow, site conditions, and equipment performance requirements, to determine whether specifications of the use of equipment with repowered engines, electric drive trains, or other high efficiency technologies are appropriate and feasible for the project or specific elements of the project.

BMP 2. Evaluate the feasibility and efficacy of performing on-site material hauling with trucks equipped with on-road engines. This BMP has been implemented by consideration of barge transport.

BMP 3. Ensure that all feasible avenues have been explored for providing an electrical service drop to the construction site for temporary construction power. When generators must be used, use alternative fuels, such as propane or solar, to power generators to the maximum extent feasible.

BMP 6. Limit deliveries of materials and equipment to the site to off peak traffic congestion hours.

BMP 7. Minimize idling time by requiring that equipment be shut down after five minutes when not in use (as required by the State airborne toxics control measure [Title 13, Section 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site and provide a plan for the enforcement of this requirement.

BMP 8. Maintain all construction equipment in proper working condition and perform all preventative maintenance. Required maintenance includes compliance with all manufacturer's recommendations, proper upkeep and replacement of filters and mufflers, and maintenance of all engine and emissions systems in proper operating condition. Maintenance schedules shall be detailed in an Air Quality Control Plan prior to commencement of construction.

BMP 9. Implement tire inflation program on jobsite to ensure that equipment tires are correctly inflated. Check tire inflation when equipment arrives on-site and every two weeks for equipment that remains on-site. Check vehicles used for hauling materials off-site weekly for correct tire inflation. Procedures for the tire inflation program shall be documented in an Air Quality Management Plan prior to commencement of construction.

BMP 10. Develop a project specific ride share program to encourage carpools and shuttle vans for construction worker commutes.

BMP 12. For deliveries to project sites where the haul distance exceeds 100 miles and a heavy-duty class 7 or class 8 semi-truck or 53-foot or longer box type trailer is used for hauling, a SmartWay certified truck will be used to the maximum extent feasible.

BMP 14. Develop a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste.

BMP 15. Evaluate the feasibility of restricting all material hauling on public roadways to off-peak traffic congestion hours. During construction scheduling and execution minimize, to the extent possible, uses of public roadways that would increase traffic congestion.

References

California Department of Water Resources (DWR), 2012. Climate Action Plan, Phase 1: Greenhouse Gas Emissions Reduction Plan, May 2012.

California Air Pollution Control Officers Association (CAPCOA), 2008. *CEQA & Climate Change, Evaluating and Addressing Greenhouse Gas Emissions from projects Subject to the California Environmental Quality Act*, January 2008.

Butte County Air Pollution Control District, 2014. *CEQA Air Quality Handbook*, October 2014.

Feather River Air Quality Management District (FRAQMD), 2010. Indirect Source Review Guidelines, June 2010.

Sacramento Metropolitan Air Quality Management District (SMAQMD), 2009. *CEQA Guidelines*, December 2009, revised May 2018.

San Joaquin Valley Air Pollution Control District (SJVAPCD), 2015. *Guidance for Assessing and Mitigating Air Quality Impacts*, March 2015.

Tehama County Air Pollution Control District (TCAPCD), 2015. *Air Quality Planning and Permitting Handbook*, April 2015.

Yolo-Solano Air Quality Management District (YSAQMD), 2007. *Handbook for Assessing and Mitigating Air Quality Impacts*, July 2007.

3.2.9 Hazards and Hazardous Materials

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
9. HAZARDS AND HAZARDOUS MATERIALS — Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☒	☐
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☒	☐

Discussion

The proposed project repair sites are located in 8 counties within the Central Valley. Proposed project activities would occur at 29 sites at State Plan of Flood Control levees. A few of the repair sites would be located within a quarter mile of a school, which are sensitive receptors.

Hazardous Materials

Materials and waste may be considered hazardous if they are poisonous (toxicity), can be ignited by open flame (ignitability), corrode other materials (corrosivity), or react violently, explode or generate vapors when mixed with water (reactivity). The term "hazardous material" is defined in law as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment.[10] In some cases, past uses can result in spills or leaks of hazardous materials to the ground, resulting in soil and groundwater contamination. The use, storage, transportation and disposal of hazardous materials are subject to numerous federal, State and local laws and regulations.

[10] State of California, Health and Safety Code, Chapter 6.95, Section 25501(o).

Information about hazardous materials sites in the proposed project repair sites was collected by conducting a review of the California Environmental Protection Agency's (CalEPA) Cortese List Data Resources (Cortese List) and the State Water Resources Control Board's GeoTracker list. The Cortese List includes data resources that provide information regarding the facilities or sites identified as meeting the Cortese List requirements. The Cortese List is updated at least annually, in compliance with California regulations (California Code Section 65964.6(a)(4)) and includes federal superfund sites, State response sites, non-operating hazardous waste sites, voluntary cleanup sites, and school cleanup sites. The GeoTracker list shows the locations and cleanup status of Leaking Underground Storage Tanks (LUST).

Based on a review of the Cortese List and GeoTracker conducted in November 2018, no active listed sites or LUSTs are located within 0.25 miles of the proposed project activities (CalEPA 2018). In addition, none of the sites listed were identified to be within the proposed project repair sites.

Fire Suppression

The proposed project repair sites are primarily located within a Local Responsibility Area (LRA) where the individual counties are responsible for fire suppression. One site is within the City of Sacramento. The California Department of Forestry and Fire Protection (CAL FIRE) has identified the areas of the counties where the repair sites are located has mostly unzoned and some Moderate Fire Hazard Severity Zones (MFHSZ) (CAL FIRE 2018).

a, b) **Less-than-Significant Impact.** Construction activities associated with the proposed project would require use of hazardous materials such diesel, gasoline, solvents, hydraulic fluid, grease, and other compounds not considered acutely hazardous or hazardous when used in small quantities. The improper use, storage, handling, transport or disposal of hazardous materials could result in accidental release of hazardous materials, thereby exposing construction workers, the public and the environment, including soil and/or ground or surface water, to hazardous materials contamination. Transportation of hazardous materials on area roadways is regulated by California Highway Patrol (CHP) and Caltrans, and storage and use of these materials is regulated by the Department of Toxic Substances Control (DTSC), as outlined in Title 22 of the CCR. Any proposed project activities that would use or store hazardous materials would be required to obtain permits, as needed, and comply with appropriate regulatory agency standards designed to avoid hazardous waste releases. Compliance with these laws and requirements, and implementation of some of the BMPs described in the project description would ensure that potential impacts would be minimized, and impacts would be less than significant.

c) **Less-than-Significant Impact.** Hazardous materials such as fuels, oils, and other vehicle maintenance fluids would be on site during construction, creating the potential for a spill or accident to occur. Hazardous materials could also be transported near and around the proposed project area while materials are being hauled. The transportation of hazardous materials is regulated by State and federal law. Furthermore, the proposed project would not emit or otherwise use of large amounts of hazardous or acutely hazardous materials or

highly toxic materials that could existing schools within one-quarter mile of the repair sites, and this impact would be less than significant.

d) **No Impact.** The project is not located on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Cortese List) and therefore would not create a significant hazard to the public or the environment from identified hazardous materials sites. No known hazardous materials exist within the proposed project sites. Therefore, no impact would occur.

e) **Less-than-Significant Impact.** The proposed project includes construction activities at several sites within two miles of private airport facilities. No structures would be erected within airport property or within two miles of a public or private use airport that would impede or impair airport operations. Therefore, impacts would be less than significant.

f) **Less-than-Significant Impact.** The proposed project would result in construction traffic (primarily haul of sediment and vegetation) along roadways that may be used by emergency vehicles. However, given the temporary increase in traffic volumes and similarity to existing traffic patterns and vehicle use, alternative routes are anticipated to be readily available. Furthermore, in areas where construction traffic may be heavier, signage and traffic safety measures would be implemented by DWR. This impact would be less than significant.

g) **Less-than-Significant Impact.** Project construction activities involve fuel burning equipment and machinery located in areas where the risk of wildland fire is considered to be low to moderate (CAL FIRE 2018). Construction activities would occur along levees where riparian vegetation is present and adjacent lands that are mostly irrigated agriculture. These vegetation and land use types have a low potential for wildland fires. Furthermore, DWR contractors and staff would be equipped with fire safety equipment (e.g., water trucks, extinguishers, etc.) and fire safety plans to prevent accidental fire on the project site. Therefore, the proposed project would not result in significant increase in risk of fire that would expose people or structures to a significant risk of loss, injury or death involving wildland fires, and impacts would be less than significant.

References

California Environmental Protection Agency (CalEPA), 2018. List of Hazardous Waste and Substances sites from Department of Toxic Substances Control (DTSC) EnviroStor database. Available: List of Hazardous Waste and Substances sites from Department of Toxic Substances Control (DTSC) EnviroStor database. Accessed November 5, 2018.

California Department of Forestry and Fire Protection (CAL FIRE), 2018. California Fires Hazard Severity Zone Map Update Project. Available: http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps. Accessed November 2, 2018.

3.2.10 Hydrology and Water Quality

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

Discussion

The proposed project levee repair sites are located along the Sacramento River, San Joaquin River, Old River, Yankee Slough, Elk Slough, Steamboat Slough, Yolo Bypass, and Georgiana Slough. The levees are within the Sacramento River Basin north of the Delta and the San Joaquin River Basin south of the Delta.

The Sacramento River Basin covers 27,210 square miles and includes the entire area drained by the Sacramento River. For planning purposes, this includes all watersheds tributary to the Sacramento River that are north of the Cosumnes River watershed. The principal streams are the Sacramento River and its larger tributaries: the Pit, Feather, Yuba, Bear, and American Rivers to the east; and Cottonwood, Stony, Cache, and Putah Creeks to the west. Major reservoirs and lakes include Shasta, Oroville, Folsom, Clear Lake, and Lake Berryessa. DWR Bulletin 118-80 identifies 63 ground water basins in the Sacramento watershed area. The Sacramento Valley floor is divided into 2 ground water basins. Other basins are in the foothills or mountain valleys. There are areas other than those identified in the DWR Bulletin with ground waters that have beneficial uses Central Valley Regional Water Quality Control Board (CVRWQCB) (2018).

The San Joaquin River Basin covers 15,880 square miles and includes the entire area drained by the San Joaquin River. It includes all watersheds tributary to the San Joaquin River and the Delta south of the Sacramento River and south of the American River watershed. The principal streams in the basin are the San Joaquin River and its larger tributaries: the Cosumnes, Mokelumne, Calaveras, Stanislaus, Tuolumne, Merced, Chowchilla, and Fresno Rivers. Major reservoirs and lakes include Pardee, New Hogan, Millerton, McClure, Don Pedro, and New Melones (CVRWQCB 2018).

DWR Bulletin 118-80 identifies 39 ground water basins in the San Joaquin watershed area. The San Joaquin Valley floor is divided into 15 separate ground water basins, largely based on political considerations. Other basins are in the foothills or mountain valleys. There are areas other than those identified in the DWR Bulletin with ground waters that have beneficial uses (CVRWQCB 2018).

Significant portions of major rivers and the Delta are impaired, to some degree, by discharges from agriculture, mining, urbanization, and industries. Upstream, small streams and tributaries to the Sacramento and San Joaquin Rivers are impaired or threatened because of discharges from mining, forestry, and urban development activities.

A variety of historic and ongoing point and non-point industrial, urban, and agricultural activities degrade the quality of ground water. Discharges to ground water associated with these activities include industrial and agricultural chemical use and spills; underground and above ground tank and sump leaks; landfill leachate and gas releases; septic tank failures; improper animal waste management; and chemical seepage via shallow drainage wells and abandoned wells (CVRWQCB 2018).

Dam failure is a potential hazard in numerous areas downstream of local, State, and federal dams in the Central Valley. Flooding of the area below a dam may occur as a result of structural failure of the dam, overtopping, or a seiche (earthquake generated waves). The collapse and structural failure of a dam may be caused by a severe storm, earthquakes, or internal erosion of piping caused by embankment and foundation leakage. Larger dams that would inundate significant portions of the project area include the Shasta Dam, Red Bluff Diversion Dam on the Sacramento River and Black Butte Dam on Stony Creek, Oroville Dam, Folsom Dam, and Camanche Dam.

a, e) **Less-than-Significant Impact.** Exposed slopes and graded contours during construction could be subject to rainfall and erosion and could cause temporary discharges of sediment and other contaminants in stormwater runoff to surrounding areas. Sediment and other pollutants could result in degradation of receiving water quality in the Sacramento River and San Joaquin River and the Delta at levels above applicable water quality standards, which could result in potentially significant impacts. DWR would be implement appropriate erosion control BMPs as described in Section 2.4.9 of the project description, apply for a general construction National Pollutant and Discharge Elimination System permit from the RWQCB, and comply with applicable water quality certification permits pursuant to Section 401 of the Clean Water Act to prevent water quality pollutants such as silt, sediment, hazardous materials, and construction related fluids from entering

receiving waters. Therefore, the proposed project would result in less-than-significant impacts to water quality.

b) **No Impact.** The proposed project would not alter hydrology, pump groundwater, or reduce groundwater recharge such that the groundwater table would be altered. There would be no additional impervious surfaces created as part of the proposed project that would reduce surface area capable of percolation. Therefore, no impact would occur.

c) **Less-than-Significant Impact.** The proposed project would not alter the existing drainage pattern of the tributaries or rivers flows and high water events that are contained by the State Plan of Flood Control levees. Restoration of the flood capacity of the levees would better accommodate high water events. There would be no change to drainage patterns in the project sites that would alter stormwater runoff and flows. As described previously, the proposed project would prevent erosion and siltation through the implementation of BMPs and compliance with applicable permits. By restoring the flood capacity of the State Plan of Flood Control levees, high water events would be more thoroughly contained by the levees and their impacts would be less than significant.

d) **No Impact.** The proposed project activities would not be located in tsunami or seiche hazard zones. The proposed repair sites of the State Plan of Flood Control levees would be located in zones protected from flooding by the State Plan of Flood Control and would not be exposed to flood hazards during the timing of construction activities. Therefore, there would be no impact.

References

Central Valley Regional Water Quality Control Board (CVRWQCB), 2018. The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region; The Sacramento River Basin and the San Joaquin River Basin. May 2018.

3.2.11 Land Use and Land Use Planning

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

Environmental Setting

The proposed project repair sites are located within Yolo, Sutter, Tehama, Butte, Colusa, Glenn, San Joaquin, and Sacramento counties. Land use character within the vicinity of the proposed project consists primarily of agricultural, grazing, open space, rural residential, urban, and industrial uses. According to the counties general plans, the proposed project sites are designated as primarily agriculture, rural residential, and public or open space. However, the levees are designated as public with some portions of open space.

Discussion

a) **No Impact.** The proposed project would include the repair and rehabilitation of levees. The proposed project would not include the construction of any buildings or other features that would create a new physical barrier between any existing communities, nor would it restrict access to any community. Although some temporary construction-related traffic disturbances affecting road access could occur, alternative routes are anticipated to be readily available and project-related activities would not restrict access to any community. Therefore, the proposed project would not physically divide an established community and no impact would occur.

b) **Less-than-Significant Impact.** Private properties in the vicinity of the proposed project levee repair sites are on land currently designated by the respective counties as agricultural land. Project activities would be limited to the existing levees, laydown areas, and associated infrastructure. Construction activities would be temporary and would not conflict with existing land use designations. There would be no conversion of existing land uses and the proposed project would not result in conflict with local or State regulations.

However, several regional habitat conservation plans including, Butte, Yolo, Yuba-Sutter, and Solano County Conservation Plans, encompass many of the proposed project levee repair sites. However, the proposed project construction activities would be limited to the existing levees, laydown areas, and roads. Although staging and vehicle movement would occur outside of the project repair sites, these activities would be temporary and would not conflict with existing regional habitat conservation plans. Further, as described in the project description conservation measures, disturbance to habitats or special status species would be avoided or replaced according to resource agencies' mitigation ratios

and would be consistent with local conservation plans and mitigation ratios, including those required by various local, State, and federal permits. Therefore, the proposed project would not conflict with any adopted habitat conservation plan, natural community conservation plan or any other approved local, regional, or State habitat conservation plan. Impacts related to habitat conservation plans would be less than significant.

References

California Department of Fish and Wildlife (CDFW), 2017. California Regional Conservation Plans. Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=68626&inline. Accessed October 26, 2018.

Colusa County, 2012. Colusa County General Plan – Land Use Element. Available: https://www.countyofcolusa.org/DocumentCenter/View/2725. Accessed October 26, 2018.

Sacramento County, 2011. General Plan Land Use Diagram. Available: www.per.saccounty.net/Documents/Maps/GPLU_2030_UPDATED_FINAL_120613_sm.pdf. Accessed October 26, 2018.

San Joaquin County, 2017. San Joaquin County – Land Use Element. Available: https://www.sjgov.org/commdev/cgi-bin/cdyn.exe/file/Planning/General%20Plan%202035/Part%203.1a_Land%20Use_2017-03-13.pdf. Accessed October 26, 2018.

Sutter County, 2011. Sutter County General Plan - Land Use and Planning Element. Available: https://www.suttercounty.org/assets/pdf/cs/ps/gp/documents/deir/04.0%20Land%20Use.pdf. Accessed October 26, 2018.

Tehama County, 2009. Tehama County General Plan – Land Use Element. Available: http://www.tehamagp.com/documents/final_general_plan/2.0%20Landuse_032309.pdf. Accessed October 26, 2018.

Yolo County, 2009. Yolo County General Plan Land Use Designations: General Plan 2030. Available: http://www.yolocounty.org/Home/ShowDocument?id=10862. Accessed October 26, 2018.

3.2.12 Mineral Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
12. MINERAL RESOURCES — Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

Discussion

The majority of Tehama County's mineral wealth is derived from the extraction of non-metallic sand, gravel, and volcanic cinder, which are used primarily by local paving and construction industries (Tehama County 2008). Butte County's predominant mining products are aggregate resources and stone (Butte County 2010). Notable mineral resources in Glenn County include natural gas and construction grade aggregate material (Glenn County 1993). Construction aggregate is currently the main market for mining resources produced in Sutter County and consists predominantly of sand, gravel, soil for construction projects, and crushed stone (Sutter County 2010). The primary resources identified in Colusa County include chromium, copper, mercury, sand/gravel, and stone with the majority of the records indicating no known efforts of mineral extraction (Colusa County 2011). A variety of minerals were once mined in Yolo County. The chief minerals presently mined are aggregate and natural gas. A repair site is located in an area known to have natural gas (Yolo County 2009). The primary mineral resource in San Joaquin County are sand and gravel aggregate. Limited extraction of peat, gold, and silver is also known to occur. In San Joaquin County, the proposed project repair sites are located in areas with a potential for aggregate resources (San Joaquin County, 2014). Mineral resources in Sacramento County include sand, gravel, clay, gold, silver, peat, topsoil, lignite, natural gas and petroleum (Sacramento County 2017).

a - b) **No Impact.** As identified in the general plans of the counties where the repair sites are located, there are no active or planned mines in the vicinity, and although some of the repair sites are in areas known to have mineral resources, the repair sites are located at existing levees and adjacent rural agricultural, and a few urban land uses. Therefore, implementation of the proposed project would not result in the loss of availability of a known mineral resource and would not result in the loss of availability of a locally-important mineral resource recovery site.

References

Butte County, 2010. Butte County General Plan Draft Environmental Impact Report. April 8, 2010.

Colusa County, 2011. Public Draft Environmental Impact Report for the 2030 Colusa County General Plan Update. November 2011.

Glenn County, 1993. Environmental Setting Technical Paper, Glenn County General Plan Volume III. January 1993.

Sacramento County, 1993. 1993 General Plan, Conservation Element. Adopted December 15, 1993 (as amended on September 26, 2017).

Sacramento County, 2017. Sacramento County General Plan of 2005-2030, Conservation Element. Adopted November 9, 2011 (as amended September 26, 2017).

San Joaquin County, 2014. San Joaquin County 2035 General Plan Draft Environmental Impact Report. October 2014.

Sutter County, 2010 General Plan Environmental Impact Report. 2010.

Tehama County, 2008. Tehama County 2008-2028 General Plan Draft Environmental Impact Report. September 2008.

Yolo County, 2009. Yolo County 2030 Countywide General Plan Environmental Impact Report. April 2009.

3.2.13 Noise

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

Environmental Setting

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude. Given that the typical human ear is not equally sensitive to all frequencies of the audible sound spectrum, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes low and extremely high frequencies, referred to as A-weighting, and is expressed in units of A-weighted decibels (dBA).[11]

Noise Exposure and Community Noise

Noise levels rarely persist consistently over a long period of time. Rather, noise levels at any one location vary with time. Specifically, community noise is the result of many distant noise sources that constitute a relatively stable background noise exposure where the individual contributors are unidentifiable. Throughout the day, short duration single-event noise sources (e.g., aircraft flyovers, motor vehicles, sirens) that are readily identifiable to the individual add to the existing background noise level. The combination of the slowly changing background noise and the single-event noise events give rise to a constantly changing community noise environment.

To legitimately characterize a community noise environment and evaluate cumulative noise impacts, community noise levels must be measured over an extended period of time. This time-varying characteristic of environmental noise is described using statistical noise descriptors, including the ones described below:

[11] All noise levels reported herein reflect A-weighted decibels unless otherwise stated.

L_{eq}: The equivalent sound level is used to describe noise over a specified period of time, typically one hour, in terms of a single numerical value. The L_{eq} is the constant sound level that would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

L_{max}: The instantaneous maximum noise level measured during the measurement period of interest.

Ldn: The day-night average sound level (Ldn) is the energy average of the A-weighted sound levels occurring during a 24-hour period, accounting for the greater sensitivity of most people to nighttime noise by weighting ("penalizing") nighttime noise levels by adding 10 dBA to noise between 10:00 p.m. and 7:00 a.m.

In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise would be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause adverse response.

These relationships occur in part because of the logarithmic nature of the decibel system. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, but rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

Applicable Noise Regulations

Sacramento County. The Sacramento County Code Section 6.68.090 (e) exempts construction noise from its exterior noise standards provided that it does not occur between the hours of 8:00 p.m. and 6:00 a.m. weekdays or between 8:00 p.m. and 7:00 a.m. on weekends. Policy NO-9 of the County General Plan Noise Element states that noise associated with construction activities shall adhere to the County Code requirements. Specifically, Section 6.68.090(e) addresses construction noise within the County.

Yolo County. Yolo County currently has not adopted countywide noise ordinances but has some specific standards for certain activities occurring in some parts of the County. While Action Item HS-A61 of the County General Plan directs the county to adopt a noise ordinance that establishes standards for construction equipment and noise-emitting construction activities, this action has not been taken to date.

Sutter County. The Sutter County Code does not address construction related noise. However, Policy N 1.6: Construction Noise, of the Sutter County General Plan requires discretionary projects to limit noise-generating construction activities within 1,000 feet of noise-sensitive uses

(i.e., residential uses, daycares, schools, convalescent homes, and medical care facilities) to daytime hours between 7:00 a.m. and 6:00 p.m. on weekdays, 8:00 a.m. and 5:00 p.m. on Saturdays, and prohibits construction on Sundays and holidays unless permission for the latter has been applied for and granted by the County.

Colusa County. The Colusa County Code Section 11A-3 prohibits construction activity between the hours of 7:00 p.m. and 7:00 a.m. weekdays and 7:00 p.m. and 8:00 a.m. on weekends to address noise control. The Colusa County General Plan does not contain policies that address noise from construction activities.

San Joaquin County. The San Joaquin County Code Section 9-1025.9 (c)(3) exempts construction noise from its exterior noise standards provided that it does not occur between the hours of 9:00 p.m. and 6:00 a.m. The San Joaquin General Plan Health and Safety Element does not contain policies that address noise from construction activities but does contain Policy PHS-9.4 that requires construction projects anticipated to generate a significant amount of vibration to ensure acceptable interior vibration levels at nearby vibration-sensitive uses based criteria of the Federal Transit Administration.

Tehama County. The Tehama County Code does not quantitatively establish time limits or noise standards related to construction activities. Policy N-2.4 of the Tehama County General Plan directs the County to restrict construction activities to the hours as determined in the Countywide Noise Control Ordinance, if such an Ordinance is adopted. However, such adoption has not occurred to date. Implementation of Measure N-2.4b requires all internal combustion engines that are used in conjunction with construction activities to be muffled according to the equipment manufacturers requirements.

Butte County. The Butte County Code Section 41A-9 (f) exempts construction noise from its exterior noise standards provided that it does not occur between sunset and sunrise weekdays or between 6:00 p.m. and 8:00 a.m. on Saturdays or 6:00 p.m. and 10:00 a.m. Sundays. These restrictions do not apply if there are no sensitive land uses within 1,000 feet. Policy HS-P1.9 of the County General Plan Noise Element requires the following noise control measures at construction sites:

- Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Locate stationary noise-generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction project area; and
- Utilize quiet air compressors and other stationary noise-generating equipment where appropriate technology exists and is feasible.

Discussion

a) **Less-Than-Significant Impact, or Less than Significant with Mitigation Incorporated.** The following analysis is organized by county based on each counties' noise ordinances.

Sacramento County Repair Sites. Repair sites 46, 47, 58, 59, 60 and 77 are located in Sacramento County. As stated in Section 2.3 in the project description, all work would occur during daylight hours with a maximum work day of 6 a.m. to 5 p.m. These hours would be consistent with the restrictions of Sacramento County Code Section 6.68.090 (e) and Policy NO-9 of the County General Plan Noise Element which exempts construction noise from its exterior noise standards provided that it does not occur between the hours of 8:00 p.m. and 6:00 a.m. weekdays. Therefore, proposed construction work for repair sites within Sacramento County would be less than significant with respect to generation of noise levels in excess of standards established in the local general plan or noise ordinance.

Yolo County Repair Sites. Repair sites 42, 48 through 53, 61, 63, 65, and 67 are located within Yolo County. As stated in Section 2.3, all work would occur during daylight hours with a maximum work day of 6 a.m. to 5 p.m. These hours would be consistent with the Yolo County Code and General Plan which have yet to establish construction noise limits or time limits. Therefore, proposed construction work for repair sites within Yolo County would be less than significant with respect to generation of noise levels in excess of standards established in the local general plan or noise ordinance.

Sutter County Repair Site. Repair site 54 is located within Sutter County. As stated in Section 2.3, all work would occur during daylight hours with a maximum work day of 6 a.m. to 5 p.m. These hours would be consistent with the restrictions of Policy N 1.6: Construction Noise, of the Sutter County General Plan. Therefore, proposed construction work for the repair site within Sutter County would be less than significant with respect to generation of noise levels in excess of standards established in the local general plan or noise ordinance**.**

Colusa County Repair Site. Repair site 44 is located within Colusa County. As stated in Section 2.3, all work would occur during daylight hours with a maximum work day of 6 a.m. to 5 p.m. Work between the 6 a.m. to 7 a.m. hour would not be consistent with the restrictions of Colusa County Code Section 11A-3. Consequently, a mitigation measures is identified to require work at repair site 44 to not commence until 7 a.m. With implementation of this mitigation measure, proposed construction work for the repair site within Colusa County would be less than significant with respect to generation of noise levels in excess of standards established in the local general plan or noise ordinance.

San Joaquin County Repair Sites. Repair sites 55, 62 and 69 through 74 are located within San Joaquin County. As stated in Section 2.3, all work would occur during daylight hours with a maximum work day of 6 a.m. to 5 p.m. These hours would be consistent with the restrictions of San Joaquin County Code Section 9-1025.9 (c)(3) which exempts construction noise from its exterior noise standards provided that it does not occur between the hours of 9 p.m. and 6 a.m. weekdays. Therefore, proposed construction work for repair sites within San Joaquin County would be less than significant with respect to generation of noise levels in excess of standards established in the local general plan or noise ordinance.

Tehama County Repair Site. Repair site 76 is located within Tehama County, which has not established noise level or time limit restrictions to construction activity. Implementation Measure N-2.4b of the County General Plan requires all internal combustion engines that are used in conjunction with construction activities to be muffled according to the equipment manufacturers requirements. Such a requirement is consistent with DWR standard BMP's. Therefore, proposed construction work for the repair sites within Tehama County would be less than significant with respect to generation of noise levels in excess of standards established in the local general plan or noise ordinance.

Butte County Repair Site. Repair site 79 is located within Butte County. As stated in Section 2.3, all work would occur during daylight hours with a maximum work day of 6 a.m. to 5 p.m. Work between the 6 a.m. to 7 a.m. hour would not be consistent with the restrictions of Butte County Code Section 41A-9 (f).

Policy HS-P1.9 of the County General Plan Noise Element requires the specific noise control measures at construction sites. Consequently, a mitigation measure is identified to require work at repair site 79 to include County-specific noise control measures. With implementation of this mitigation measure, proposed construction work for the repair site within Butte County would be less than significant with respect to generation of noise levels in excess of standards established in the local general plan or noise ordinance.

> **Mitigation Measure NOI-1: Work Hour Restriction for Repair Site 44.** To ensure consistency with the restrictions of the Colusa County Code, work hours at repair site 44 shall be restricted to between 7 a.m. and 7 p.m.
>
> **Mitigation Measure NOI-2: Noise control Measures for Repair Site 79.** To ensure consistency with the restrictions of Policy HS-P1.9 of the County General Plan Noise Element, DWR and its contractors shall implement the following construction-related noise control measures at repair site 79:
>
> - Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
> - Locate stationary noise-generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction project area; and
> - Utilize quiet air compressors and other stationary noise-generating equipment where appropriate technology exists and is feasible.

None of the jurisdictions of the repair sites have established quantitative standards in terms of noise exposure or incremental increases in noise with respect to construction. Simultaneous operations of a crane, a dozer, a loader and an excavator generates a noise level of approximately 76 dBA at 100 feet based on the Roadway Construction Noise Model of the Federal Highway Administration.

Most repair sites are located in rural areas that are generally distant from noise-sensitive land uses such as residences. Specifically repair sites 44, 47, 48, 52, 61, 71 and 79 have a single rural residence approximately 400 feet away as the closest receptor. Repair sites 50, 58, 59 and 63 have a single rural residence approximately 200 feet away as the closest receptor. Repair sites 60, 65 and 67 have a single rural residence approximately 100 feet away as the closest receptor. All other repair sites are distant from sensitive receptors. As such, while construction noise may be audible at the nearest receptors, the temporary nature of the work which would generally be 4 weeks in duration at each site would render temporary noise increases to be less than significant.

Once constructed, the repair sites would require an equal or lesser degree of maintenance as currently exists. Consequently, construction work for the repair sites would be less than significant with respect to creation of substantial permanent increases in noise levels.

b) **Less-than-Significant Impact.** Ground-borne vibration from construction activities at the repair site would produce negligible vibration. The types of construction equipment associated with repair activities include excavators, loaders and trucks. This type of equipment is not identified by Caltrans (2013) or the Federal Transit Administration (FTA 2018) as associated with generation of notable vibration. Additionally, remediation activities would take place 100 feet or more from the nearest residential development which would provide ample separation for attenuation if any vibration were to occur. For example, FTA identifies a reference vibration level of 87 vibration decibels at 25 feet from operations of a large bulldozer. Using vibration attenuation equations, the resultant vibration at 1,000 feet would be 40 vibration decibels. This is a vibration level of 50 to 55 vibration decibels which is considered to be typical background levels. Therefore, vibration associated with proposed remediation activities would be a less than significant impact.

c) **No Impact.** The proposed project would not establish new noise sensitive land uses that could be exposed to noise from local airports. Most repair sites are located in rural areas that are generally distant from commercial or general aviation airports. Therefore, there would be no impact in relation to airports and the project exposing people residing or working in the project area to excessive noise levels.

References

Butte County, 2012. *Butte County General Plan, Health and safety Element*, November 2012.

California Department of Transportation (Caltrans), 2013. *Transportation and Vibration Guidance Manual*, September 2013; p. 37.

Colusa County, 2012. *2030 General Plan, Noise Element*, July 2012.

Glenn County, 2015. *Glenn County General Plan, Public Safety Element*, June 2015.

Sacramento County, 2017. *County of Sacramento General Plan, Noise Element*, December 2017.

San Joaquin County, 2016. *San Joaquin County General Plan Public Health and Safety Element*, December 2016.

Sutter County, 2011. *2030 General Plan, Policy Document*, March 2011.

Tehama County, 2009. *Tehama County General Plan Noise Element*, March 2009.

U.S. Department of Transportation, Federal Transit Administration (FTA), 2018. *Transit Noise and Vibration Impact Assessment*, September 2018.

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

3.2.14 Population and Housing

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

Environmental Setting

The nearest cities to the proposed project levee repair sites are the cities of Sacramento, Rio Vista, Chico, Elk Grove, and Stockton, which have populations of: 484,530; 8,055; 89,377; 163,634, and 301,443 residents in 2016, respectively (U.S. Census Bureau 2016). Housing types near the proposed project levee repair sites include rural ranch houses and single family houses.

Discussion

a) **No Impact.** The proposed project would include the repair and rehabilitation of levees. No new homes, businesses, road extensions, or other infrastructure for development are proposed as part of the proposed project. The proposed project would employ existing DWR staff and regionally sourced contractors. Accordingly, the proposed project would not induce population growth in the area and would not affect nearby cities or towns. Therefore, no impact would occur.

b) **No Impact.** Construction for the proposed project would be limited to existing levee infrastructure; however, for landside and certain waterside repairs, staging areas may require construction easements from adjacent landowners. Although the project may be located within easements of these homes, it would not result in displacement or the need for construction of replacement housing elsewhere as the. In addition, it would not displace or increase the number of residents or permanent workers and there would be no impact.

References

United States Census Bureau, 2016. Total Population. Available: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_5YR_B01003&prodType=table. Accessed November 2, 2018.

3.2.15 Public Services

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
15. PUBLIC SERVICES — Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
i) Fire protection?	☐	☐	☐	☒
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Environmental Setting

Fire protection and emergency services are provided by each of the counties within the project area's respective fire districts. All fire stations in the vicinity of the project are adequately staffed to respond to emergency calls in the area and equipped to provide medical aid at the basic life support level.

Each of the counties within the projects area's respective Sheriff's Department has the responsibility for providing law enforcement services to the project area. Additionally, the California Highway Patrol (CHP) provides traffic enforcement on all highways and roadways in the unincorporated area.

Discussion

a.i-v) **No Impact.** The proposed project would not result in the construction of any new facilities or increase of population that would generate a need for new or physically altered public services facilities.

Given the nature of proposed activities, the proposed project is not expected to expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, there would be no change in the demand for police and fire protection and community amenities such as schools and parks or that which currently exists and no impact would occur.

3.2.16 Recreation

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
16. RECREATION:				
a) 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?	☐	☐	☐	☒
b) 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?	☐	☐	☐	☒

Environmental Setting

As described in Chapter 2, Project Description, the proposed project occurs along 30 levees located in Yolo, Sutter, Tehama, Butte, Colusa, Glenn, San Joaquin, and Sacramento counties. There are no parks or wildlife refuges within or adjacent to the project area.

Discussion

a, b) **No Impact.** There are no federal, State, regional or other parks within the proposed project area. The proposed project would not result in the construction of any new facilities or population increase; therefore, there would be no increased use of parks or recreational facilities over that which currently occurs. In addition, there would be no recreational facility expansion or construction as a result of the proposed project. Therefore, no impact would occur.

3.2.17 Transportation and Traffic

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

Environmental Setting

The focus of this analysis centers around construction traffic associated with repair of levee sites. No long-term operational traffic impacts would result from the project. There are two basic categories of construction traffic that would access the levee sites: (1) daily workers and staff; and, (2) material deliveries and hauling operations from earthwork activities. The daily workers would access the sites via the adjacent roadway network depending on their origins and destinations.

Traffic effects associated with the project were evaluated based on average daily traffic and specific time periods during the day (i.e., hourly basis, as needed). The analysis was based on the following assumptions:

- Material and equipment hauling activity would occur during normal work hours, from 6:00 a.m. to 5:00 p.m.
- Each levee site would require approximately 2 to 4 weeks of active construction, and up to nine sites may be repaired at the same time.
- There would typically be 7 workers at each site per day.
- Material would originate from the following locations: San Rafael, Sacramento, Tracy, Ione, Jamestown, Sutter, Lodi, Elk Grove, Vina, and Smartsville.

Haul routes and access roads for each of the proposed repair sites are shown on Figures 3 through 35. These routes were selected based on the most direct/shortest paths and using designated truck facilities to the extent feasible, consistent with city and county guidance regarding selection of haul routes.

Roadway Network

Roadways within the project vicinity are traveled by a mix of vehicle types, with automobiles, trucks, motorcycles, emergency vehicles, and trucks with trailers traversing the larger arterials, and automobiles, trucks, and agricultural equipment using county roadways and local roads (on

county roadways). Descriptions of the types of roadways associated with the project are provided below. Traffic volumes for roadways within the vicinity of proposed project sites are presented in **Table TRA-1**, and were compiled from a variety of sources including county general plans and Caltrans traffic data. Traffic volumes were not available for local roads within the proposed project haul routes.

Regional Facilities

Interstate 80 (I-80): I-80 is the second-longest interstate highway in the United States. The section of I-80 located within Yolo County (adjacent to Site 42), runs east-west, and is classified as a freeway. I-80 consists of six lanes, is divided by barriers, and has an exclusive bicycle path located on the north side of the corridor east of the site. Near the project, it has an Annual Average Daily Traffic (AADT) of approximately 146,500 vehicles.

Interstate 5 (I-5): I-5 is the major north-south highway on the Pacific Coast, extending from Mexico to Canada, and linking major cities within California, as well as Oregon and Washington. The section of I-5 within the proposed project haul routes traverses Sacramento, Tehama, and San Joaquin Counties. Classified as a freeway/interstate, I-5 consists of four lanes along most of the haul routes. It varies in traffic volume from 156,200 AADT in the City of Sacramento to 30,500 AADT near Site 76 in Tehama County.

State Route 4 (SR 4): SR 4 runs east-west south of Stockton in San Joaquin County, providing access to Sites 62, 69, and 70. It's a two-lane principal arterial with an AADT of approximately 14,700 vehicles.

State Route 12 (SR 12): SR 12 is a rural collector that runs east-west in the southwestern portion of Sacramento County. It provides two lanes and has an AADT of approximately 17,000 vehicles near Site 77.

State Route 45 (SR 45): SR 45 is one of the primary transportation corridors extending through Colusa County, providing access to Site 44. Because of its rural location, it is a two-lane, minor arterial with a relatively low AADT of 900 vehicles.

State Route 50 (SR 50): SR 50 is located within the City of Sacramento. It heads east-west across I-5 and turns into I-305 west of the intersection. SR 50 is an eight-lane freeway that has an AADT of 232,200 vehicles.

State Route 70 (SR 70): SR 70 is a major transportation corridor that runs north/south within the southeastern portion of Sutter County, providing access to Site 54. It is a four-lane expressway with an AADT of 18,000 vehicles.

State Route 84 (SR 84): SR 84 travels south from West Sacramento, through Yolo County, into Solano County. Where it traverses the project study area in Yolo County, it is a conventional two-lane highway with an AADT between 430 (Site 48) and 1,350 vehicles (Sites 51, 52, and 61), depending on the location.

TABLE TRA-1
EXISTING ADT ON PROJECT ACCESS ROUTES

Phase	Site ID No	County	Regional Access				Local Roadways		
			Name	Roadway Classification	Number of Lanes	(ADT)	Name	Roadway Classification	Number of Lanes
4	42	Yolo	I-80	Freeway	6	146,500	Levee Road	Local	2
							Chiles Road (County Road 32)	Local (Emergency/Access Corridor)	2
	54	Sutter	SR 70	Expressway	4	18,800	Pleasant Grove Road	Urban Minor Arterial	2
							Levee Road	Rural Local Road	2
							Bear River Drive	Rural Major Collector	2
	48	Yolo	SR 84	Conventional Two-Lane Highway	2	430	South River Road	Local	2
							Private Road	Local	2
	51	Yolo	SR 84	Conventional Two-Lane Highway	2	1,350	Levee Road	Local	2
							South River Road	Local	2
							County Road 141	Local	2
							County Road 142	Local	2
							County Road 144	Local	2
	52	Yolo	SR 84	Conventional Two-Lane Highway	2	1,350	Elk Slough	Local	2
							South River Road	Local	2
							County Road 141	Local	2
							County Road 144	Local	2
	53	Yolo	SR 84	Conventional Two-Lane Highway	2	1,350	Elk Slough	Local	2
							South River Road	Local	2
							County Road 141	Local	2
							County Road 144	Local	2
	49	Yolo	SR 84	Conventional Two-Lane Highway	2	1,100	Private Road	Local	2
							South River Road	Local	2
							County Road 142	Local	2
							County Road 144	Local	2

TABLE TRA-1
EXISTING ADT ON PROJECT ACCESS ROUTES

Phase	Site ID No	County	Regional Access				Local Roadways		
			Name	Roadway Classification	Number of Lanes	(ADT)	Name	Roadway Classification	Number of Lanes
4 (cont.)	50	Yolo	SR 84	Conventional Two-Lane Highway	2	1,100	Private Road	Local	2
							South River Road	Local	2
							County Road 142	Local	2
							County Road 144	Local	2
	46	Sacramento	SR 160	Rural Collector	2	1,500	Grand Island Road	Local Street	2
	47	Sacramento	SR 160	Rural Collector	2	1,500	Private Road	Local Street	2
							Private Road	Local Street	2
							Private Road	Local Street	2
							Grand Island Road	Local Street	2
	55	San Joaquin	I-5	Interstate	4	24,000	W. Lorenzen Road	Rural	2
							E. Lorenzen Road	Rural	2
							Kasson Road	Rural	2
	44	Colusa	SR 45	Minor Arterial	2	900	Miller Landing Road	Local	2
							Levee Road	Local	2
							Ceres Avenue	Local	2
5	76	Tehama	I-5	Interstate Freeway	4	30,500	State Highway 99w	State Highway	2
							Levee Road	Local/Minor	2
							Reno Avenue	Local/Minor	2
							Private Road	Local/Minor	2
	79	Butte	SR 99	State Highway	4	37,900	Oroville-Chico Highway	Rural Arterial	2
							Levee Road	Rural Local Road	2
							Lott Road	Rural Local Road	2
							Private Road	Rural Local Road	2

TABLE TRA-1
EXISTING ADT ON PROJECT ACCESS ROUTES

Phase	Site ID No	County	Regional Access				Local Roadways		
			Name	Roadway Classification	Number of Lanes	(ADT)	Name	Roadway Classification	Number of Lanes
5 (cont.)	77	Sacramento	SR 160	Rural Collector	2	3,950	Tyler Island Road	Local Street	2
			SR 12	Rural Collector	2	17,000	Levee Road	Local Street	2
							Private Road	Local Street	2
	58	Sacramento	SR 160	Rural Collector	2	2,150	Randall Island Road	Local Street	2
							River Road	Local Street	2
	59	Sacramento	I-5	Freeway	4	55,900	Vorden Road	Local Street	2
							Herzog Road	Local Street	2
							Twin Cities Road	Local Street	2
							River Road	Local Street	2
	60	Sacramento	I-5	Freeway	4	55,900	Vorden Road	Local Street	2
							Herzog Road	Local Street	2
							Twin Cities Road	Local Street	2
							River Road	Local Street	2
	62	San Joaquin	SR 4	Principal Arterial	2	14,700	S Roberts Road	Rural	2
							Levee Road	Rural Residential	2
							Private Road	Rural Residential	2
			I-5	Interstate	4	150,000	Private Road	Rural Residential	2
							Private Road	Rural Residential	2
	61	Yolo	SR 84	Conventional Two-Lane Highway	2	1,350	Clarksburg Road	Local	2
							S River Road	Local	2
							Netherlands Road	Local	2
							School Street	Local	2
	69	San Joaquin	SR 4	Principal Arterial	2	14,700	Private Road	Rural Residential	2
							John Tuk Road	Rural Residential	2
							Levee Road	Rural Residential	2

TABLE TRA-1
EXISTING ADT ON PROJECT ACCESS ROUTES

Phase	Site ID No	County	Regional Access				Local Roadways		
			Name	Roadway Classification	Number of Lanes	(ADT)	Name	Roadway Classification	Number of Lanes
5 (cont.)	70	San Joaquin	SR 4	Principal Arterial	2	14,700	Private Road	Rural Residential	2
							John Tuk Road	Rural Residential	2
							Levee Road	Rural Residential	2
	73	San Joaquin	I-5	Interstate	4	114,500	Private Road	Rural Residential	2
							Levee Road	Rural Residential	2
							Private Road	Rural Residential	2
	74	San Joaquin	I-5	Interstate	4	103,000	Undine Road	Rural Residential	2
							Levee Road	Rural Residential	2
							Private Road	Rural Residential	2
	63	Yolo	SR 84	Conventional Two-Lane Highway	2	1,250	Clarksburg Road	Local	2
							Willow Avenue	Local	2
							S River Road	Local	2
	65	Yolo	SR 84	Conventional Two-Lane Highway	2	1,250	Clarksburg Road	Local	2
							Willow Avenue	Local	2
							S River Road	Local	2
	67	Yolo	SR 84	Conventional Two-Lane Highway	2	1,250	Clarksburg Road	Local	2
							Willow Avenue	Local	2
							S River Road	Local	2
	72	San Joaquin	I-5	Interstate	4	114,500	Private Road	Rural Residential	2
							Levee Road	Rural Residential	2
							Private Road	Rural Residential	2

TABLE TRA-1
EXISTING ADT ON PROJECT ACCESS ROUTES

Phase	Site ID No	County	Regional Access				Local Roadways		
			Name	Roadway Classification	Number of Lanes	(ADT)	Name	Roadway Classification	Number of Lanes
5 (cont.)	71	San Joaquin	I-5	Interstate	4	79,000	S Roberts Road	Rural Residential	2
							Private Road	Rural Residential	2
							Undine Road	Rural Residential	2
							Private Road	Rural Residential	2
							Levee Road	Rural Residential	2

SOURCES: Butte County 2018, Caltrans 2018, County of Sacramento 2017, County of Yolo 2009, Glenn County 1993, Sutter County 2011, Tehama County 2009, San Joaquin County 2016.

State Route 99 (SR 99): SR 99 is a two- to four-lane state highway where it serves the project sites in Tehama and Butte Counties. SR 99 is one of the primary transportation routes through Tehama County, and provides access to a large number of the developed urban and rural areas. SR 99 runs north-south through Butte County, connecting it with Yuba City and Sacramento to the south, and Red Bluff to the northwest. Near Site 79, it is a four-lane highway with an AADT of approximately 37,900 vehicles.

State Route 160 (SR 160): SR 160 is a two-lane rural collector that runs parallel to the Sacramento River levees in the Delta from the Sacramento City Limits at the northern edge of Freeport to the southern tip of the Delta at Antioch Bridge (Senator John Nejedly Bridge). Where it traverses areas near the project sites, it ranges in AADT from 1,500 vehicles (near Sites 46 and 47) to 3,950 vehicles (near Site 77).

Local Roadways

Local roadways surrounding the project site are typically paved or unpaved, low volume roadways that support two-directional traffic. As noted above, traffic volumes for these facilities were not available. However, due to their rural location, functional classifications, and lack of connectivity to major activity centers, local roadways are assumed to be relatively free of congested traffic conditions.

Airports/Airstrips

Sacramento International Airport, four municipal airports (Stockton Metropolitan Airport, Red Bluff Municipal Airport, Corning Airport, and Chico Municipal Airport), and a number of smaller airports and airstrips (Van Dyke Strip, Rio Linda Airport, Sacramento Executive Airport, Flying B Ranch Airport, Franklin Field, Spezia Airport, Deer Creek Ranch Airport, Butte Creek Hog Ranch Airport, etc.) are located within a 10-mile radius of a rehabilitation site.

Transit

Transit service in the project study area varies widely depending on the county and the intensity of land uses (i.e., rural, suburban, urban) surrounding the proposed rehabilitation sites. Types of service range from fixed-route and paratransit service in large metropolitan areas (i.e., City of Sacramento), to public dial-a-ride service in more rural areas. Due to the remote nature of many of the proposed rehabilitation sites, direct transit access is not provided to any of the sites. However, YoloBus routes (e.g., Davis Express Trip, Cache Creek, and East Davis-Sacramento Express) and County Trax Route 6 utilize regional access routes for Sites 42 (I-80) and 76 (SR 99), respectively. As shown below in **Table TRA-2**, the remaining sites are located over a half a mile from a bus stop or are located in rural areas where direct transit access is not provided.

Pedestrian and Bicycle System

Pedestrian facilities include sidewalks, crosswalk, and pedestrian signals, and are generally located in developed communities. The proposed project is generally located in rural areas where pedestrian facilities are limited. One off-street bike path, and a number of on-street bike lanes, provide access to some of the project sites. As shown below in **Table TRA-3**, these bike lanes are typically located on local roadways, except one bike path that is located adjacent to I-80.

TABLE TRA-2
EXISTING BUS ACCESS TO PROJECT SITES

Phase	Site ID No	Served by Transit (Y/N)	Name of Service Provider and Route Number
4	42	N	YoloBus Routes: Davis Express Trip, Cache Creek, and East Davis-Sacramento Express utilize access routes, but does not serve the site.
	54	N	None
	48	N	None
	51	N	None
	52	N	None
	53	N	None
	49	N	None
	50	N	None
	46	N	None
	47	N	None
	55	N	None
	44	N	None
5	76	N	County Trax Route 6 utilizes access routes, but does not serve the site.
	79	N	None
	77	N	None
	58	N	None
	59	N	None
	60	N	None
	62	N	None
	61	N	None
	69	N	None
	70	N	None
	73	N	None
	74	N	None
	63	N	None
	65	N	None
	67	N	None
	72	N	None
	71	N	None

SOURCES: Butte County 2018, County of Sacramento 2017, County of Yolo 2009, Glenn County 1993, Sutter County 2011, Tehama County 2009, Regional Transit Committee 2017, San Joaquin County 2016.

TABLE TRA-3
EXISTING BICYCLE AND PEDESTRIAN ACCESS TO PROJECT SITES

Phase	Site ID No	Designated Bicycle Facility (Y/N)	Type	Designated Pedestrian Facility (Y/N)	Type
4	42	Y	Existing Class I Path on I-80	N	N/A
	54	N	N/A	N	N/A
	48	N (Planned)	Proposed Class II Lane on South River Road	N	N/A
	51	N (Planned)	Proposed Class II Lane on County Road I44	N	N/A
	52	N (Planned)	Proposed Class II Lane on County Road I44	N	N/A
	53	N (Planned)	Proposed Class II Lane on County Road I44	N	N/A
	49	N (Planned)	Proposed Class II Lane on County Road I44	N	N/A
	50	N (Planned)	Proposed Class II Lane on County Road I44	N	N/A
	46	N	N/A	N	N/A
	47	N	N/A	N	N/A
	55	N (Planned)	Proposed Class III Bike Route on Kasson Road	N	N/A
	44	N	N/A	N	N/A
5	76	N	N/A	N	N/A
	79	N (Planned)	There is a planned Class 2 Bike Route on the Oroville Chico Hwy and Lott Road	N	N/A
	77	N (Planned)	Class II Bike Lane (Planned) – SR 12	N	N/A
	58	N (Planned)	Class II Bike Lane (Planned) – SR 160	N	N/A
	59	N (Planned)	Class II Bike Lane (Planned) – Twin Cities Road Class I Bike Path (Planned) – Isleton-Stone Lakes Trail	N	N/A
	60	N (Planned)	Class II Bike Lane (Planned) – Twin Cities Road Class I Bike Path (Planned) – Isleton-Stone Lakes Trail	N	N/A
	62	N	N/A	N	N/A
	61	N (Planned)	Proposed Class II Lane on County Road I44	N	N/A
	69	N	N/A	N	N/A
	70	N	N/A	N	N/A
	73	N	N/A	N	N/A
	74	N	N/A	N	N/A
	63	N (Planned)	Proposed Class II Lane on South River Road	N	N/A
	65	N (Planned)	Proposed Class II Lane on South River Road	N	N/A
	67	N (Planned)	Proposed Class II Lane on South River Road	N	N/A
	72	N	N/A	N	N/A
	71	N	N/A	N	N/A

SOURCE: Butte County 2011, Colusa County 2012, Sacramento County 2011, County of Yolo 2009, Glenn County 2018, Sutter County 2011, Tehama County Transportation Commission 2013, San Joaquin Council of Governments 2012.

Discussion

a) **Less-than-Significant Impact.** The proposed project would not conflict with an applicable traffic plan, ordinance or policy or impact the performance of the circulation system because hauling of materials would not require alterations to existing circulation systems. Access to repair sites would occur primarily along existing paved public roads, levee crown roads, or unpaved private farm roads. Where existing roads are not adequate for site access, temporary access roads may be constructed for hauling equipment and materials to and from the site. Temporary access roads would be located in remote locations and would connect to low volume roadways; therefore, they would not affect existing circulation and impacts would be less than significant.

b) **Less-than-Significant Impact.** Equipment, rock, and personnel would be mobilized to each site, with materials being transported from San Rafael, Sacramento, Tracy, Ione, Jamestown, Sutter, Lodi, Elk Grove, Vina, and Smartsville. **Table TRA-4** details the percent increase in traffic that would occur on regional access routes as a result of each project site. It should be noted that some of the proposed rehabilitation sites would be repaired using an in-water barge with a mounted crane to transport materials and a work boat. However, to provide a conservative assessment of potential impacts to project study area transportation facilities, all material haul trips were assumed to be performed using trucks. In addition to the truck traffic associated with haul trips, each site would also require an additional 14 vehicle trips per day for the seven employees working at each site (1 trip inbound, 1 vehicle trip outbound).

TABLE TRA-4
CONSTRUCTION TRAFFIC IMPACTS TO REGIONAL ACCESS

Phase	Site ID No	County	Regional Access				Project Traffic		
			Name	Roadway Classification	Number of Lanes	(ADT)	Truck Trips per Site	Truck Trips per Day[1]	Percent Increase
4	42	Yolo	I-80	Freeway	6	146,500	2,198	220	0.15%
	54	Sutter	SR 70	Expressway	4	18,800	594	59	0.31%
	48	Yolo	SR 84	Conventional Two-Lane Highway	2	430	1,052	105	24.4%
	51	Yolo	SR 84	Conventional Two-Lane Highway	2	1,350	102	10	0.74%
	52	Yolo	SR 84	Conventional Two-Lane Highway	2	1,350	234	23	1.7%
	53	Yolo	SR 84	Conventional Two-Lane Highway	2	1,350	124	12	0.89%
	49	Yolo	SR 84	Conventional Two-Lane Highway	2	1,100	490	49	4.5%
	50	Yolo	SR 84	Conventional Two-Lane Highway	2	1,100	102	10	0.91%
	46	Sacramento	SR 160	Rural Collector	2	1,500	2,212	221	14.7%
	47	Sacramento	SR 160	Rural Collector	2	1,500	2,212	221	14.7%
	55	San Joaquin	I-5	Interstate	4	24,000	2,836	284	1.2%

TABLE TRA-4
CONSTRUCTION TRAFFIC IMPACTS TO REGIONAL ACCESS

Phase	Site ID No	County	Regional Access				Project Traffic		
			Name	Roadway Classification	Number of Lanes	(ADT)	Truck Trips per Site	Truck Trips per Day[1]	Percent Increase
4 (cont.)	44	Colusa	SR 45	Minor Arterial	2	900	638	64	7.1%
5	76	Tehama	I-5	Interstate Freeway	4	30,500	2,480	248	0.81%
	79	Butte	SR 99	State Highway	4	37,900	3,270	327	0.86%
	77	Sacramento	SR 160	Rural Collector	2	3,950	330	33	0.84%
			SR 12	Rural Collector	2	17,000			0.19%
	58	Sacramento	SR 160	Rural Collector	2	2,150	3,986	399	18.6%
	59	Sacramento	I-5	Freeway	4	55,900	1,940	194	0.35%
	60	Sacramento	I-5	Freeway	4	55,900	730	73	0.13%
	62	San Joaquin	SR 4	Principal Arterial	2	14,700	2,776	278	1.9%
			I-5	Interstate	4	150,000			0.19%
	61	Yolo	SR 84	Conventional Two-Lane Highway	2	1,350	9,556	956	70.8%
	69	San Joaquin	SR 4	Principal Arterial	2	14,700	2,626	263	1.8%
	70	San Joaquin	SR 4	Principal Arterial	2	14,700	164	16	0.11%
	73	San Joaquin	I-5	Interstate	4	114,500	1,276	128	0.11%
	74	San Joaquin	I-5	Interstate	4	103,000	1,962	196	0.10%
	63	Yolo	SR 84	Conventional Two-Lane Highway	2	1,250	3,868	387	31.0%
	65	Yolo	SR 84	Conventional Two-Lane Highway	2	1,250	828	83	6.6%
	67	Yolo	SR 84	Conventional Two-Lane Highway	2	1,250	450	45	3.6%
	72	San Joaquin	I-5	Interstate	4	114,500	992	99	0.09%
	71	San Joaquin	I-5	Interstate	4	79,000	512	51	0.06%

NOTES:
1 For the purposes of the transportation analysis, a two-week construction period was assumed, with construction occurring five days per week. This is a conservative assumption, as construction could take up to four weeks with construction occurring up to six days a week at sites that require the largest amount of material hauling.

As shown in Table TRA-4, most regional access routes would experience a minimal increase in AADT. The magnitude of these increases is within the range of typical daily variation in traffic levels (usually on the order of ±5 percent) that might be expected on the major roadways serving the project sites, and roadway operating conditions on these roadways would remain substantially similar to current conditions. The exceptions are Sites 44, 46, 47, 48, 58, 61, 63, and 65 with estimated increases in AADT of between 7 and 71 percent. Those percentages of increase in traffic volumes (greater than the above-cited ±5 percent typical daily variation in traffic levels) would be noticeable to the average motorist. To determine whether project-generated increases in traffic volumes would be

significant, additional analysis is provided below for these sites using the concept of Level of Service (LOS). LOS grades range from LOS A (free-flow operations) to LOS F (highly-congested operations).

Site 44: The AADT on SR 45 in Colusa County in the vicinity of the project site would increase from 900 to 964 (+7 percent) during the two- to four-week construction period. SR 45 is an undivided, 2-lane uninterrupted-flow highway that would operate at LOS A with the additional project-generated trucks (FDOT 2012). Colusa County has an established LOS standard of LOS C for rural roadways; therefore, LOS A conditions are considered to be acceptable (Colusa County, 2012). Furthermore, the increase in traffic volume would be temporary (approximately a two- to four-week period); therefore, the impact would be less than significant.

Site 46: The AADT on SR 160 in Sacramento County in the vicinity of the project site would increase from 1,500 to 1,721 (+15 percent) during the two- to four-week construction period. SR 160 is an undivided, 2-lane uninterrupted-flow highway that would operate at LOS A with the additional project-generated trucks (FDOT 2012). Sacramento County has an established LOS standard of LOS D for rural roadways; therefore, LOS A conditions are considered to be acceptable (County of Sacramento, 2017). Furthermore, the increase in traffic volume would be temporary (approximately a two- to four-week period); therefore, the impact would be less than significant.

Site 47: The AADT on SR 160 in Sacramento County in the vicinity of the project site would increase from 1,500 to 1,721 (+15 percent) during the two- to four-week construction period. SR 160 is an undivided, 2-lane uninterrupted-flow highway that would operate at LOS A with the additional project-generated trucks (FDOT 2012). Sacramento County has an established LOS standard of LOS D for rural roadways; therefore, LOS A conditions are considered to be acceptable (County of Sacramento 2017). Furthermore, the increase in traffic volume would be temporary (approximately a two- to four-week period); therefore, the impact would be less than significant.

Site 48: The AADT on SR 84 in Yolo County in the vicinity of the project site would increase from 430 to 535 (+24 percent) during the two- to four-week construction period. SR 84 is an undivided, 2-lane uninterrupted-flow highway that would operate at LOS A with the additional project-generated trucks (FDOT, 2012). Yolo County has an established LOS standard of LOS C for roadways; therefore, LOS A conditions are considered to be acceptable (County of Yolo, 2009). Furthermore, the increase in traffic volume would be temporary (approximately a two- to four-week period); therefore, the impact would be less than significant.

Site 58: The AADT on SR 160 in Sacramento County in the vicinity of the project site would increase from 2,150 to 2,549 (+19 percent) during the two- to four-week construction period. SR 160 is an undivided, 2-lane uninterrupted-flow highway that would operate at LOS A with the additional project-generated trucks (FDOT, 2012). Sacramento County has an established LOS standard of LOS D for rural roadways;

therefore, LOS A conditions are considered to be acceptable (County of Sacramento, 2017). Furthermore, the increase in traffic volume would be temporary (approximately a two- to four-week period); therefore, the impact would be less than significant.

Site 61: The AADT on SR 84 in Yolo County in the vicinity of the project site would increase from 1,350 to 2,306 (+71 percent) during the two- to four-week construction period. SR 84 is an undivided, 2-lane uninterrupted-flow highway that would operate at LOS A with the additional project-generated trucks (FDOT, 2012). Yolo County has an established LOS standard of LOS C for roadways; therefore, LOS A conditions are considered to be acceptable (County of Yolo, 2009). Furthermore, the increase in traffic volume would be temporary (approximately a two- to four-week period); therefore, the impact would be less than significant.

Site 63: The AADT on SR 84 in Yolo County in the vicinity of the project site would increase from 1,250 to 1,637 (+31 percent) during the two- to four-week construction period. SR 84 is an undivided, 2-lane uninterrupted-flow highway that would operate at LOS A with the additional project-generated trucks (FDOT, 2012). Yolo County has an established LOS standard of LOS C for roadways; therefore, LOS A conditions are considered to be acceptable (County of Yolo, 2009). Furthermore, the increase in traffic volume would be temporary (approximately a two- to four-week period); therefore, the impact would be less than significant.

Site 65: The AADT on SR 84 in Yolo County in the vicinity of the project site would increase from 1,250 to 1,333 (+7 percent) during the two- to four-week construction period. SR 84 is an undivided, 2-lane uninterrupted-flow highway that would operate at LOS A with the additional project-generated trucks (FDOT, 2012). Yolo County has an established LOS standard of LOS C for roadways; therefore, LOS A conditions are considered to be acceptable (County of Yolo, 2009). Furthermore, the increase in traffic volume would be temporary (approximately a two- to four-week period); therefore, the impact would be less than significant.

As shown above, both SR 160 in Sacramento County and SR 84 in Yolo County would be used to access several of the proposed rehabilitation sites where substantial increases in traffic volumes would occur. Even if construction activities were to occur simultaneously at these sites, however, the additive effect of construction vehicles would still not cause the LOS to drop from LOS A to the LOS D (Sacramento County) or LOS C (Yolo County) standards. Based on the analysis above, the project is not expected to conflict with an applicable congestion management program, including level of service, travel demand measure or other established standards, and impacts would be less than significant.

c) **Less-than-Significant Impact.** Hauling of materials would be performed using highway approved trucks and trailers. The use of regional and local roadways to access the proposed rehabilitation sites could increase traffic safety hazards due to potential conflicts between construction vehicles (with slower speeds and wider turning radii than autos) and automobiles, and bicyclists. However, haul routes are along roadways with

little to no sharp curves or uncontrolled dangerous intersections, and all proposed levee sites have established ingress and egress. Furthermore, due to the low-volume nature and lack of bicycle and pedestrian activity of the immediately adjacent roadways, no backups or potential conflicts with other roadway users on the roads leading to the levee sites are anticipated. Therefore, no substantial increase in hazards due to a design feature or incompatible uses would occur and there would be no impact.

d) **Less-than-Significant Impact.** The proposed levee improvement sites are located where there is established ingress and egress. Temporary construction staging and permanent improvements to the levee would not block or interfere with emergency response vehicles. Increases in traffic volumes on local roadways providing access to the proposed rehabilitation sites could cause intermittent and temporary slowdowns in traffic flow, although as concluded above under impact discussion b), operational conditions are not expected to deteriorate on local roadways as a result of project-generated truck trips. The proposed project would not result in inadequate emergency access and the impact would be less than significant.

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3.2.18 Tribal Cultural Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less-than-Significant Impact*	*No Impact*
18. Tribal Cultural Resources —				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) 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	☐	☒	☐	☐
ii) 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.	☐	☒	☐	☐

Environmental Setting

This section provides a discussion of the existing conditions, as well as relevant ethnographic conditions, related to tribal cultural resources at the proposed project repair sites, including laydown areas as well as the immediately surrounding area. Information in this section is based on the *2019 Storm Damage DWR Rehabilitation – Phases 4 and 5 Repair Sites: Cultural Resources Technical Report* (ESA 2018) prepared for the proposed project. Tribal cultural resources are resources that have cultural value to a California Native American tribe. Tribal cultural resources could include any site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object. Such resources must be listed or eligible for listing in the California or National Registers, or can be identified at the discretion of the lead agency. These can include Native American archaeological sites, ethnobotanical resources, Native American ceremonial areas, and Native American human remains.

Ethnographic Context

Beginning in the early 16th century, but primarily during the late 19th and early 20th centuries, Native American lifeways and languages were documented throughout California. Whether by professional ethnographers or anthropologists, field personnel from government agencies such as the Bureau of Indian Affairs, soldiers, merchants, settlers, or travelers, ethnographic accounts partly illuminate the traditions, beliefs, and cultures of Native American groups during specific points in time. Synthesized narratives such as the *Handbook of North American Indians* (Heizer 1978) categorize Native traditions and practices; however, the complexity of regional diversity should not be overlooked.

Depopulation and relocation of Central Valley Native Americans in the 19th century resulted in conflicting and incomplete information about tribal locations. Though cultural descriptions of these groups in the English language are known from as early as 1849, most of our current cultural knowledge comes from various early 20th century anthropologists (Levy 1978:413). The uncertainty regarding the territorial boundaries of the Native American groups that occupied the proposed project sites and vicinity derives from the fact that ethnographies historically demarcated contact-period tribal boundaries in various and conflicting ways (Waechter 1993).

The proposed project sites cross the traditional lands of the following indigenous groups: Eastern Miwok, Konkow, Nisenan, and Patwin, (Kroeber 1976; McLendon and Oswalt 1978; Johnson 1978; Riddell 1978; Wilson and Towne 1978; Levy 1978). While traditional anthropological literature portrays native peoples as having static cultures and boundaries, it is clear that many variations of culture and ideology existed within and between villages. While these "static" descriptions of separations between native cultures of California make it an easier task for ethnographers to describe past behaviors and ascribe people to a particular geographic locale, this approach masks Native adaptability and self-identity. Most California's Native Americans never saw themselves as members of larger "cultural groups," as described by anthropologists. Instead, they saw themselves as members of specific village communities, perhaps related to others by marriage or kinship ties, but viewing the village as the primary identifier of their origins. In short, all tribal group boundaries should be viewed as permeable and approximate.

Prior to appearance of European American explorers and settlers, the Upper Sacramento Valley portions of the Project Area (Butte, Colusa, and Sutter Counties) were occupied by the Konkow, Nisenan, and Patwin. The Konkow Maidu ranged along on the Sacramento River in Glenn and Butte Counties and along the Feather River in Butte County. The Patwin lived in what is now Colusa, Yolo, and Solano Counties. The Eastern Miwok occupied the southernmost portions of the Project Sites, where the Sacramento River meets the Delta in Sacramento County. The Nisenan lived along the southern terminus of the Sacramento River as it entered the delta, on either side of the Feather River north to what is now Marysville, and into the Sierra foothills, up the Yuba and American River watersheds.

As with other California Native American groups, the Gold Rush of 1849 had a devastating effect on the Native Americans that inhabited the proposed project sites. The flood of miners that came to the area in search of gold brought diseases with them that decimated tribal populations. Those who survived were subjected to violence and prejudice at the hands of the miners, and the Native Americans were eventually pushed out of their ancestral territory. Although this contact with settlers had a profound negative impact on the Native American populations through disease and violent actions, these groups survived and have maintained strong communities and action-oriented organizations to this day. These groups have continued to protect their cultural heritage and identity and maintain their languages and traditions (Castillo 1978).

The 2000 U.S. Census recorded 220,657 American Indians in California (excluding Alaska Natives and Native Hawaiians) for those designating only one race. Of that number, some come from tribes outside the current boundaries of California. Currently, there are 109 federally recognized tribes in California and approximately 40 groups seeking to gain federal recognition.

Regulatory Information

Public Resources Code 21074; 21083.09

In September of 2014, the California Legislature passed Assembly Bill (AB) 52, which added provisions to the Public Resources Code concerning the evaluation of impacts on tribal cultural resources under CEQA, and consultation requirements with California Native American tribes. In particular, AB 52 now requires lead agencies to analyze a project's impacts on "tribal cultural resources," separately from paleontological resources (PRC Section 21074; 21083.09). The Bill defines "tribal cultural resources" in a new section of the PRC, Section 21074. The Bill also requires lead agencies to engage in additional consultation procedures with respect to California Native American tribes (PRC Sections 21080.3.1, 21080.3.2, 21082.3).

Tribal Cultural Resources

Impacts to TCR also are considered under CEQA (PRC Section 21084.2). Section 21074(a) defines a TCR as any of the following:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
  - included or determined to be eligible for inclusion in the California Register; or
  - included in a local register of historical resources, as defined in PRC Section 5020.1(k).
- 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 Section 5024.1. In applying these criteria, the lead agency would consider the significance of the resource to a California Native American tribe.

According to PRC Section 21074(a)(c), a historical resource, unique archaeological resource, or non-unique archaeological resource may also be a TCR if it is included or determined eligible for the California Register or included in a local register of historical resources.

Methodology and Results

Section 3.2.5, Cultural Resources describes the archival and field survey methods implemented by ESA archaeologists to identify potential prehistoric archaeological resources. As detailed in that discussion, results of the records search indicated that prehistoric archaeological sites were identified in proximity to several of the proposed project repair sites and laydown sites.

Native American Correspondence

California Natural Resources Agency Tribal Consultation Policy

In 2012, the California Natural Resources Agency issued a final California Natural Resources Agency Tribal Consultation Policy that laid out the agency's duties towards collaborative, meaningful tribal consultation. This policy has five components:

Outreach—this component emphasizes early, meaningful, and regular consultation, dissemination of public documents to tribes for their review, and engaged follow-up and meetings with tribal representatives.

Tribal Liaisons—this component recommends the designation of a tribal liaison that serves as a central point of contact for tribes and that provides oversight of department tribal communications.

Tribal Liaison Committee—this component creates a tribal liaison committee, consisting of all the agency's tribal liaisons, who are mandated to meet regularly and report back to the agency about consultation efforts and opportunities.

Access to Contact Information: this component mandates that the agency will work with the Native American Heritage Commission to maintain a contact list of tribal representatives.

Training—this final component mandates that the agency will provide training for tribal liaisons, executive staff, managers, and employees on implementation of the policy.

California Department of Water Resources Tribal Policy

Similar to the Natural Resource Agency's policy document, in 2016 DWR released its own Tribal Engagement Policy. This policy consists of seven bullet points, given below verbatim:

- Establish meaningful dialogue between DWR and California Tribes early on in planning for CEQA projects to ensure that DQR's tribal outreach efforts are consistent with mandated tribal consultation policies, and to ensure that California Tribes know how information from consultation affected DWR's decision making process;
- Establish guidelines to share information between DWR and California Tries, while protecting their confidential information to the fullest extent of the law;
- Consult with California Tribes to identify and protect tribal cultural resources where feasible, and to develop treatment and mitigation plans to mitigate for impacts to tribal cultural places;
- Develop criteria in communication plans and grant funding decisions for all applicable DWR programs that will facilitate tribal participation;
- Provide cultural competency training for DWR executives, managers, supervisors, and staff on tribal engagement and consultation practices;
- Recognize that California Tribes have distinct cultural, spiritual, environmental, economic, public health interests, and traditional ecological knowledge about California's natural resources;
- Enable California Tribes to manage and act as caretakers of tribal cultural resources.

ESA sent a Sacred Lands File search request to the Native American Heritage Commission (NAHC) on September 24, 2018. ESA received a response dated October 8, 2018 providing the results of the Sacred Lands File search and a contact list for potentially interested Native American Tribes.

The Sacred Lands File search identified areas of interest to the United Auburn Indian Community on the United States Geological Survey (USGS) 7.5-minute series quadrangles of Knights

Landing, Courtland, and Clarksburg; and areas of interest to the Ione Band of Miwok Indians and the United Auburn Indian Community on the USGS 7.-minute series quadrangle Sacramento West. The NAHC letter stated that the Ione Band of Miwok Indians and the United Auburn Indian Community should be contacted directly concerning these results.

The NAHC also provided a contact list of 25 Native American tribes. On October 8, 2018 ESA drafted a letter for DWR to send to Native American tribes that previously requested notification under Assembly Bill AB52 will be invited to and a letter to send to Native American tribes that will be invited to share information or comments on the Project. The AB52 notification letters were sent out on October 23, 2018. On October 30, 2018 DWR received an email from United Auburn Indian Community of the Auburn Rancheria requesting to consult under AB52. In addition, a written request to consult under AB52 was received from Daniel Fonseca, Tribal Historic Preservation Officer (THPO) for Shingle Springs Band of Miwok Indians, on January 18, 2019. Consultation between DWR and both the Auburn Rancheria and Shingle Springs is ongoing.

In accordance to DWR Tribal Policy, a second set of letters was sent on December 7, 2018, to tribes whose areas of interest overlapped with the project areas but who were not consultants under AB52. These letters invited the tribes to share information or comment. Leland Kintner, the THPO for Yocha Dehe Wintun Nation, responded in a letter dated December 20, 2018, stating that they wished to consult with DWR on the project. As per DWR tribal policy, consultation with Yocha Dehe will commence following the issuance of the current IS/MND.

Discussion

a.i-ii) **Less than Significant with Mitigation Incorporated.** The Sacred Lands File review identified resources of importance to Ione Band of Miwok Indians and the United Auburn Indian Community. The listed Native American tribes are in a process of ongoing consultation with DWR concerning the identified Sacred Lands.

The results of potential project impacts to prehistoric archaeological resources that could also be considered tribal cultural resources are discussed in Section 3.2.5, Cultural Resources of this document. **Mitigation Measures CUL-1** through **CUL-3** require preconstruction training, a protocol to follow in the event of an inadvertent discovery of archaeological resources, and archaeological monitoring at some project sites. These measures also apply to TCRs, and with continued consultation efforts with Native American tribes would reduce some impacts to TCR to a less-than-significant level. In addition, mitigation measures for addressing TCRs have been recently prepared for DWR and the USACE by GEI (2018) and have been updated for the current project and are included below:

Mitigation Measure TCR-1: Implement Procedures for Inadvertent Discovery of Cultural Material and Implement an Inadvertent Discovery Plan

Survey work and literature review have not identified any known TCR's within the project area, and tribal consultation is ongoing. Project-related activities associated with the project will require ground-disturbance, including excavation,

trenching, grading, and use of staging and borrow areas. These ground disturbing activities could result in damage to or destruction of previously unidentified TCRs, which could be present within the project sites. There is no evidence of the presence of buried archaeological sites in the APE and, therefore, this impact would be less than significant. It is nevertheless possible that archaeological resources could be discovered during construction. In the event that archaeological resources that are considered TCRs are discovered during construction, Mitigation Measure TCR-1, described below, shall be implemented.

- If an inadvertent discovery of archaeological cultural materials (e.g., unusual amounts of shell, animal bone, any human remains, bottle glass, ceramics, building remains) is made at any other time during project-related construction activities or project planning, DWR, in consultation with the appropriate tribe(s), USACE, and other interested parties, will develop and implement appropriate protection and avoidance measures where feasible.

- These procedures will be developed in accordance with 36CFR 800.13 which specifies procedures for post-review discoveries. Additional measures, such as development of a Memorandum of Agreement and a Historic Property Treatment Plan, may be necessary if avoidance or protection is not possible. All the steps identified above will be detailed in an accidental-discovery plan developed before construction so that all parties are aware of the process that must be implemented should buried archaeological resources be uncovered during construction.

Mitigation Measure TCR-2: Implement Procedures for Inadvertent Discovery of Human Remains

There is no evidence of the presence of human remains in the APE and, therefore, this impact would be less than significant. It is nevertheless possible that human remains could be discovered during construction. In the event that human remains are discovered during construction, Mitigation Measure TCR-2, described below, shall be implemented.

If an inadvertent discovery of human remains is made at any other time during project-related construction activities or project planning, DWR will implement the procedures listed below. Should human remains be identified in the project APE, the following performance standards shall me met prior to implementing or continuing actions such as construction, that may result in damage to or destruction of human remains. Avoiding or substantially lessening potential significant impacts to human remains or implementation of the procedures described below maybe considered to avoid or minimize significant adverse impacts and constitute the standard by which an impact conclusion of less than significant may be reached:

- In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, DWR will immediately halt potentially damaging excavation in the area of the burial and notify the Yolo County Coroner and a professional archaeologist to determine the nature of the remains.

- The Coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or State lands (California Health and Safety Code Section 7050.5[b]). If the Coroner determines that the remains are those of a Native American, he or she must contact the NAHC by phone within 24 hours of making that determination (California Health and Safety Code Section 7050[c]).

- After the Coroner's findings have been made, the archaeologist and the NAHC-designated Most Likely Descendant (MLD), in consultation with the landowner, shall determine the ultimate treatment and disposition of the remains.

- The responsibilities of DWR for acting upon notification of a discovery of Native American human remains are identified in California PRC Section 5097.9 et seq.

Upon the discovery of Native American human remains, DWR will require that all construction work must stop within 100 feet of the discovery until consultation with the MLD has taken place. The MLD will have 48 hours to complete a site inspection and make recommendations to the landowner after being granted access to the site. A range of possible treatments for the remains, including nondestructive removal, preservation in place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment may be discussed. California PRC Section 5097.98(b)(2) suggests that the concerned parties may mutually agree to extend discussions beyond the initial 48 hours to allow for the discovery of additional remains. Site-protection measures that DWR will employ are as follows:

- Record the site with the NAHC or the appropriate Information Center; and

- Record a document with the County in which the property is located;

- If agreed to by the MLD and the landowner, DWR or DWR's authorized representative will work with the landowner and MLD to rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance if the NAHC is unable to identify an MLD, or if the MLD fails to make a recommendation within 48 hours after being granted access to the site. DWR or DWR's authorized representative may also reinter the remains in a location not subject to further disturbance if he or she rejects the recommendation of the MLD and mediation by the NAHC fails to provide measures acceptable to DWR. Mitigation may still be needed if impacts occur to those burials; DWR will consult with the MLD to identify appropriate mitigation.

- If the human remains are of historic age and are determined to be not of Native American origin, DWR will follow the provisions of the California Health and Safety Code Section 7000 (et seq.) regarding the disinterment and removal of non-Native American human remains.

Mitigation Measure TCR-3: In the Event that Tribal Cultural Resources or Traditional Cultural Properties are Discovered during Construction, Implement Procedures to Evaluate Tribal Cultural Resources/Traditional Cultural Properties and Implement Avoidance and Minimization Measures to Avoid Significant Adverse Effects.

California Native American Tribes that are traditionally and culturally affiliated with the geographic area in which the project is located may have expertise concerning their TCRs (California PRC Section 21080.3.1)., Culturally affiliated Tribes will be further consulted concerning TCRs and TCPs that may be impacted. If these types of resources are discovered during construction. Further consultation with culturally affiliated Tribes will focus on identification of measures to avoid or minimize impacts on any such resources discovered during construction. Should TCRs or TCPs be identified in the project APE during construction, the following performance standards shall me met prior to continuance of construction and associated activities that may result in damage to or destruction of TCRs or TCPs:

- DWR shall evaluate each identified TCR/TCP, prior to construction, for CRHR and NRHP eligibility through application of established eligibility criteria (California Code of Regulations 15064.636 and CFR Part 63 respectively), in consultation with interested Native American Tribes.

- If a TCR is determined to be eligible for listing on the NRHP, DWR will avoid damaging effects to the TCR/TCP in accordance with California PRC Section 21084.3, if feasible. If DWR determines that the project may cause a substantial adverse change to a TCR/TCP, and measures are not otherwise identified in the consultation process, the following are examples of mitigation capable of avoiding or substantially lessening potential significant impacts to a TCR/TCP or alternatives that would avoid significant impacts to a TCR/TCP. These measures may be considered to avoid or minimize significant adverse impacts and constitute the standard by which an impact conclusion of less-than significant may be reached:

- Avoid and preserve resources in place, including, but not limited to, planning construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

- Treat the resource with culturally appropriate dignity taking into account the Tribal cultural values and meaning of the resource, including, but not limited to, the following:
    - Protect the cultural character and integrity of the resource.
    - Protect the traditional use of the resource.
    - Protect the confidentiality of the resource.
    - Establish permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or using the resources or places.

- Protect the resource.

If a TCP is determined to be eligible for listing in the NRHP, then the procedures for determination of effect and, if adverse, treatment of the resource to resolve adverse effect will be conducted in accordance with the procedures required for compliance with Section 106 of the NHPA (36 CFR Parts 800.5–800.6).

References

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3.2.19 Utilities and Service Systems

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

Environmental Setting

Potable water within the project area is provided by both groundwater and surface water. There are several municipal and community potable water systems within the vicinity of proposed project sites. These water systems rely on water sources such as local rivers in the vicinity of the project as well as groundwater. Additionally, in the rural areas, most of the groundwater is pumped by privately owned wells.

Wastewater is treated and disposed of through septic systems or sanitary sewer collection systems and wastewater treatment plants in the vicinity of the proposed project sites, most of which are operated by the associated cities and counties.

Electricity is provided to the proposed project area by Pacific Gas and Electric Company (PG&E), which is generated and transmitted to the counties by a large network of power plants and transmission lines located throughout California. Most of the electrical service in the counties is carried through above-ground lines. However, new urban development is now typically served by underground service. PG&E currently has sufficient energy supplies and distribution facilities to meet anticipated demands and growth in the county (PG&E 2014).

Solid waste collection, recycling, and disposal services are provided to each of the cities and counties within the vicinity of the proposed project repair sites by either Waste Management or Recology. Adequate capacity is available at the existing landfills serving the proposed project sites and vicinity.

Discussion

a, c) **No Impact.** The proposed project would not result in the construction of any new facilities for stormwater, wastewater, or other utilities or result in population increase that would generate an increase in demand for utilities and service systems requiring new construction. Furthermore, it would not result in an exceedance of capacities at existing wastewater treatment facilities and there would be no impact.

b) **Less-than-Significant Impact.** The proposed project would require minimal water supply during construction activities for dust control. Water would be supplied by DWR contractors and trucked in via water trucks. Water would be sourced from locally available sources of nonpotable water regionally based on the vicinity to the proposed project repair sites and at volumes based on the size of the repair sites. The use of water for dust control would not substantially increase nonpotable water use over current conditions compared to local uses, such as agricultural irrigation. Water demand would be temporary and minor, and no new or expanded entitlements would be required. Therefore, potential impacts associated with availability of water supplies would be less than significant.

d, e) **Less-than-Significant Impact.** Materials generated from the proposed project construction activities in excess of required materials would be hauled off-site to predetermined disposal sites or landfills. The proposed project would not generate a volume of waste that would exceed the permitted capacity of landfills serving the proposed project region. Furthermore, all waste would be disposed of in accordance with federal, State, and local statutes and regulations. Therefore, this impact would be less than significant.

References

Pacific Gas and Electric Company (PG&E), 2014. Electric Service Area Maps. Available: https://www.pge.com/tariffs/tm2/pdf/ELEC_MAPS_Service_Area_Map.pdf. Accessed November 7, 2018.

3.2.20 Wildfire

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

Environmental Setting

The proposed project repair sites are located along major streams and rivers on the water side, and by agricultural, rural residential, open space, and a few urban areas on the land side, including laydown and stockpile sites. Most of the proposed project repair sites are located in areas identified by CAL FIRE as being located in areas with no fire hazard severity, while a few sites are located in areas identified as being in or adjacent to moderate fire severity zones (CAL FIRE 2019).

Discussion

a) **Less-than-Significant Impact.** Project construction activities would use major regional and local roads to haul materials to project sites. In addition, each project site would have a specific internal traffic pattern with ingress/egress points of access to allow for construction vehicles to access and leave the project sites with minimal delays or potential blocking roads during active construction periods. Because all sites would include ingress/egress points for construction vehicles, the proposed project would not substantially impair or interfere with emergency response along regional and local roadways, and impacts would be less than significant.

b) **Less-than-Significant Impact.** The proposed project would not result in changes to the existing environment at project sites that would exacerbate the risk of wildfires. All project sites would be returned to existing or better conditions after repair of the levee sites. Therefore, impacts would be less than significant.

c) **Less-than-Significant Impact.** The proposed project would not result in the installation or maintenance of infrastructure that could increase the risk of wildfire at the project sites and impacts would be less than significant.

d) **No Impact.** The proposed project would result in the repair of damaged levees to pre-damaged flood protection standards. Therefore, the proposed project would increase flood protection along the repair sites. Further, the repair sites are not located in areas with steep slopes that have been exposed by wildfires and there would be no impact.

References

California Department of Forestry and Fire Protection (CAL FIRE), 2019. California Fire Hazard Severity Zone Map Update Project: www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps. Accessed February 6, 2019.

3.2.21 Mandatory Findings of Significance

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

Discussion

a) **Less than Significant with Mitigation Incorporated.** The proposed project would be temporary in nature and involve construction activities to repair eroded levees in the State Plan of Flood Control and improve flood protection in the near future; thus providing a net benefit to the surrounding areas. The proposed project would not substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; reduce or restrict the range of rare or endangered plants or animals; or, eliminate important examples of the major periods of California history or prehistory. As discussed in the analyses provided in this Initial Study, adherence to federal, State, and local regulations, various environmental commitments implemented as part of the proposed project, and proposed mitigation measures AQ-1 through AQ-5, BIO-1 through BIO-8, CUL-1 through CUL-6, GHG-1, and NOI-1 and NOI-2, and TCR-1 through TCR-3 would reduce all potentially significant impacts to biological, cultural, and tribal cultural resources, as well as to other issue areas, to less-than-significant levels.

b) **Less than Significant with Mitigation Incorporated.** As noted throughout this document, the potential impacts of the proposed project are largely restricted to temporary and short-term construction-related impacts and are site-specific. As noted above, all of the potential direct and indirect impacts of the proposed project were determined to be fully avoided or reduced to a less-than-significant level with incorporation of mitigation measures AQ-1 through AQ-5, BIO-1 through BIO-8, CUL-1 through CUL-6, GHG-1, and NOI-1 and NOI-2, and TCR-1 through TCR-3. As a result,

the potential impacts of the proposed project are not considered cumulatively considerable, and impacts would be less than significant with mitigation incorporated.

c) **Less than Significant with Mitigation Incorporated.** The potential impacts of the proposed project are temporary and short-term impacts and are site-specific. These impacts are all localized to the proposed project repair sites and may include limited adverse effects on air quality, biological resources, cultural resources, greenhouse gas emissions, water quality/soils, and noise. However, the proposed project would not include any activities or uses that may cause substantial adverse effects on human beings, either directly or indirectly, or on the physical environment. The proposed project has been designed to meet the DWR flood engineering standards and would incorporate adherence to local codes and regulations as conditions of project approval. Compliance with applicable local, State, and federal standards, as well as incorporation of project mitigation measures, would result in less-than-significant impacts.

Appendix A

Design Specifications and Construction Considerations

Site-specific Repair Area Activities

Phase 4 Sites

Site 42, Yolo Bypass

General Characteristics	
Waterbody	Yolo Bypass
Bank (view downstream)	Right (West)
County	Yolo
Local Maintaining Agency	State Maintained Area 11 - Sacramento Maintenance Yard
Levee Problem Characteristics	
Levee Problem	Landside erosion
Levee Miles (LM)	LM 0.77
Repair Characteristics	
Repair Type	Landside stability
Work Limits (northing/easting)	NE 38.5633512508, -121.638286644 SE 38.5630411838, -121.638271396 SW 38.5630278318, -121.638614563 NW 38.5632885008, -121.638627517
Repair Length (linear feet)	75
Area of repair (acres)	0.09
Area of laydown (acres)	0.32
Estimated excavation (cubic yards)	978
Earthfill (cubic yards)	931
Aggregate base (tons)	71
Agricultural soil (tons)	89
Rockfill (tons)	0
Launch rock (tons)	0
Bedding material (cubic yards)	0
Truck Loads	1,099
Final bank slope (H:V)	3H:1V
OHWM (estimated elevation in feet)	N/A
Area of repair below OHWM (acres)	0
Area of repair above OHWM (acres)	0.09 (Entirely on landside levee slope)

Repair of the site will consist of removing the slide and interim repair materials down to below the slipout plane, replace and compact select levee fill material to achieve design profile and buttress toe with rockfill to above the landside flooding fetch line. In-water work required to place clean rock to buttress the slope fill.

The repair at Site 42 will include:

1. Using appropriate traffic control, access site from Chiles Road and from the levee crest.

2. Remove right-a-way fence, and all vegetation on repair slope.

3. Excavate and remove all soils disturbed by the instability to just below the slip plane from landside levee toe to approximately 20 feet from levee crest. Create a key trench at toe of levee for placement of rockfill.

4. Reshape and layback steep cuts and slopes.

5. Place geotextile on cleaned and shaped repair surface in advance of placing rock.

6. Place excavated material in the interim laydown area for review by Native American monitor.

7. Place rockfill in key and continue to place rockfill to top of excavated repair.

8. Alternative to placing rockfill over entire repair would be to place the geotextile and rockfill one to two feet above the maximum landside flood level then continue by compacting 6-inch lifts of earthfill until slope restoration has been achieved.

9. Remove excavated soil from the interim laydown area to contractor disposal area.

10. Tie rockfill in to slope.

11. Replace right-a-way fence.

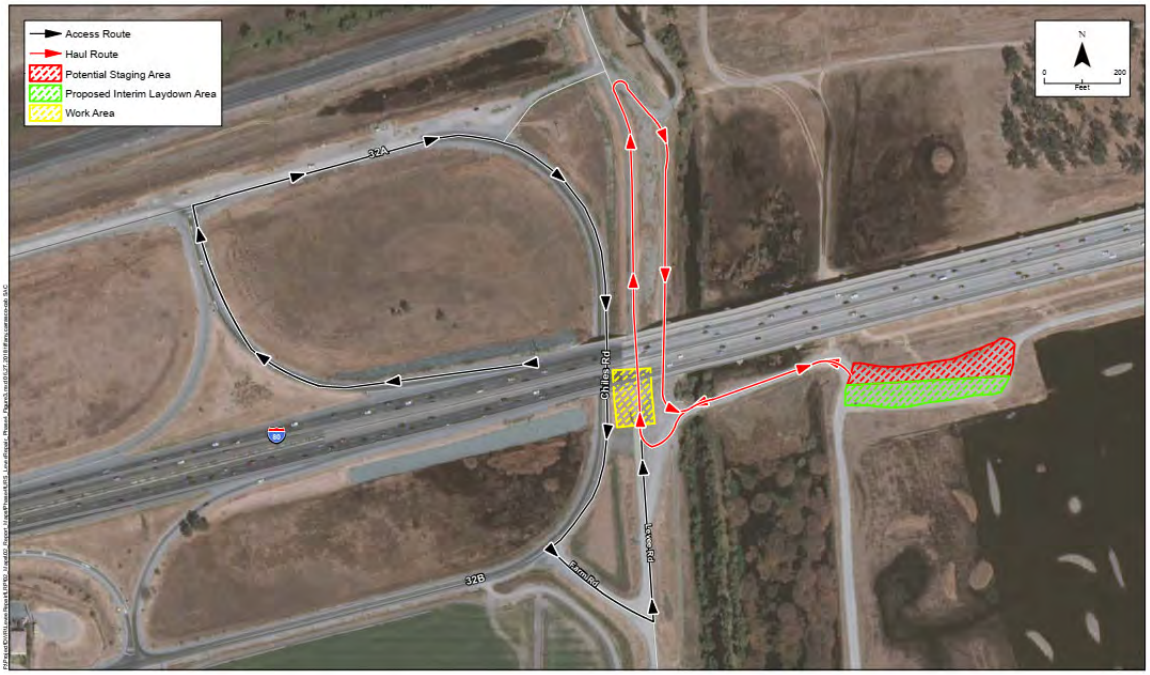
Estimated staging, species/habitat, and historical impacts:

- An existing graded waterside parking lot located in the adjacent wildlife preserve approximately 575 feet to the east of the project site is proposed for a staging and interim laydown area. The northern half is proposed as staging and southern half is proposed as laydown area. The levee crest above the repair location is approximately 55-feet wide and can also be utilized as a staging and interim laydown area.

- The project site occurs on disturbed land. There are potential jurisdictional wetlands in close proximity to the project area providing habitat to special status species giant gartersnake.

- A large colony of California for the Mexican free-tailed bat (*Tadarida brasiliensis*), according to the CDFW, is located approximately 0.19 miles north of the project repair area.

See **Figures A-2a** and **A-2b** for site location map and representative photographs, respectively.



2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-1a
Site 42, Yolo Bypass – Site Location Map

Landside erosion site after interim emergency repairs. Straw waddles for surface erosions control are visible through vegetation.

Aerial view looking east with erosion site in the foreground.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-1b
Site 42, Yolo Bypass - Representative Photographs

Site 44, Sacramento River

General Characteristics	
Waterbody	Sacramento River
Bank (view downstream)	Right (West)
County	Colusa
Local Maintaining Agency	Sacramento River West Side Levee District
Levee Problem Characteristics	
Levee Problem	Waterside Erosion
Levee Miles (LM)	LM 18.76
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 38.9543949571, -121.840733127 SE 38.9541488905, -121.840541778 SW 38.9539711327, -121.840919529 NW 38.9542833425, -121.841163988
Repair Length (linear feet)	120
Area of repair (acres)	0.19
Area of laydown (acres)	1.69
Estimated excavation (cubic yards)	216
Earthfill (cubic yards)	0
Aggregate base (tons)	64
Agricultural soil (tons	410
Rockfill (tons)	1,160
Launch rock (tons)	2,282
Bedding Material (cubic yards)	0
Truck Loads	319
Final bank slope (H:V)	1.5H:1V
OHWM (estimated elevation in feet)	26
Area of repair below OHWM (acres)	0.06
Area of repair above OHWM (acres)	0.13 (Entirely on waterside levee slope)

Repair of the site will incorporate rockfill to provide slope protection against further erosion and tie into existing upstream and downstream repairs. No dead trees/snags were noted for removal, however; small trees and brush may need to be removed. There is a potential need to mitigate water intake pipes within construction/repair area. In-water work is required to place clean rock to buttress the slope fill.

The repair at Site 44 will include:

1. Access and construction by barge is not practical, therefore; site access and construction will be conducted from the levee crest road.

2. Identify trees and protect in place.

3. Remove brush, fallen trees, stumps, snags, dead and dying trees.

4. Excavate and remove all soils disturbed by the erosion and fallen trees. Excavate a key way for the placement of launch rock.

5. Place excavated material in the lay down area for review by Native American monitor.

6. Shape slope for stability.

7. Place geotextile on cleaned and shaped repair surface in advance of placing rock.

8. Place launch rock in key and bring to 1 foot above waterline.

9. Place rockfill and tie in to slope.

10. Remove excavated soil from interim laydown area to contractor disposal area.

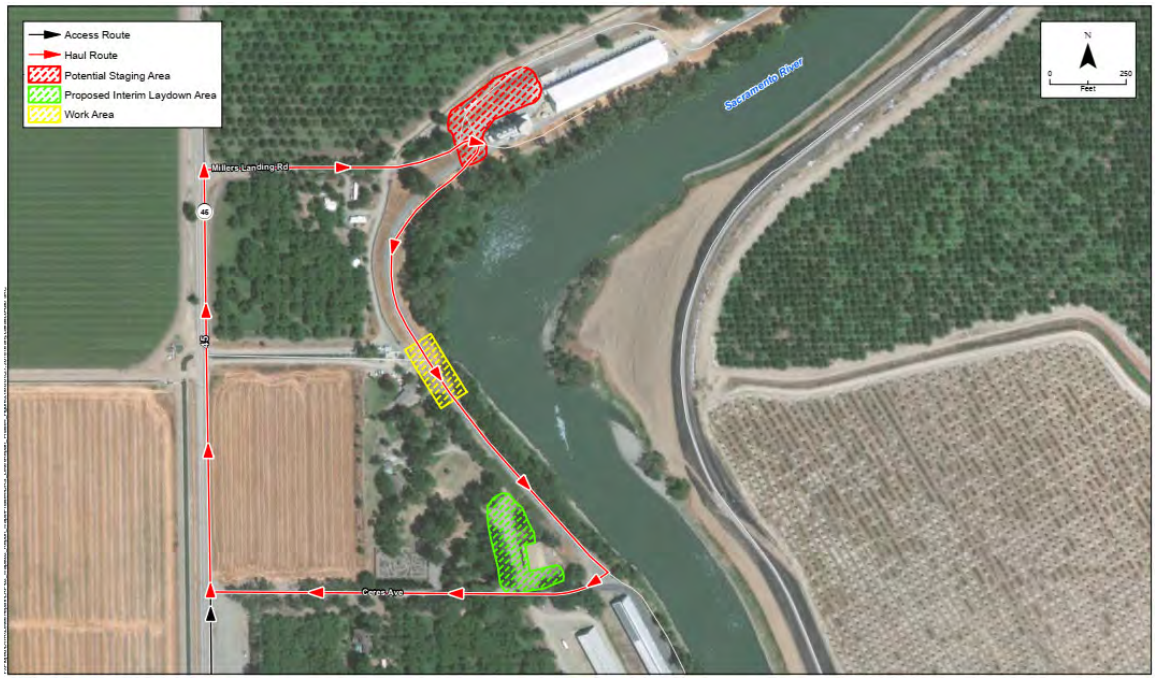
No overhead or underground utilities were observed.

Estimated staging, species/habitat, and historical impacts:

- Potential staging areas, with ample room for staging/laydown activities, are located at the end of each of the east-west access roads where they intersect with the levee. One is a large parking lot/driveway area associated with a nut processing facility adjacent to the levee located at the end of the north access road (Millers Landing Road). The other is a large farmhouse/orchard equipment parking area located at the end of the south access road (Ceres Avenue).

- Potential jurisdictional wetlands may be present along the lower bank of the repair site.

See **Figures A-3a** and **A-3b** for site location map and representative photographs, respectively.



SOURCE: DWR 2017

2017 Storm Damage DWR Rehabilitation Program / 130028.39

Figure A-2a
Site 44, Sacramento River – Site Location Map

View looking southwest at vertical erosion in levee.

Left. Downstream view of erosion and emergency rock repair at damaged site. Right. Exposed H-pile protruding from water approximately 4-feet from erosions site shoreline. H-pile may be part of submerged water intake structure and is submerged at higher flows.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-2b
Site 44, Sacramento River - Representative Photographs

Site 46, Steamboat Slough

General Characteristics	
Waterbody	Steamboat Slough
Bank (view downstream)	Left (East)
County	Sacramento
Local Maintaining Agency	RD3 – Grand Island
Levee Problem Characteristics	
Levee Problem	Waterside erosion, downed tree
Levee Miles (LM)	LM 0.18
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 38.3031962121, -121.577381085 SE 38.3029203203, -121.577138436 SW 38.3024682366, -121.577896924 NW 38.3027405159, -121.57815335
Repair Length (linear feet)	250
Area of repair (acres)	0.27
Area of laydown (acres)	0.77
Estimated excavation (cubic yards)	1,775
Earthfill (cubic yards)	0
Aggregate base (tons)	0
Agricultural soil (tons)	538
Rockfill (tons)	2,091
Launch rock (tons)	3,996
Bedding material (cubic yards)	0
Truck Loads	1,106
Final bank slope (H:V)	Portions of 1.75H:1V and 1.5H:1V
OHWM (estimated elevation in feet)	5
Area of repair below OHWM (square feet)	0.18
Area of repair above OHWM (square feet)	0.09 (Entirely on waterside levee slope)

Repair of the site will incorporate rockfill to provide slope stability and erosion protection. The erosion of the toe has caused one large oak tree and several smaller trees to fall into the slough resulting in more erosion of the bank and levee. These downed trees will require removal. Trees in the footprint that are not dead or dying may require protection from construction activities. A number of highly invasive black locust tress were also noted at the repair site and potential staging areas. It is recommended that all black locust trees be removed where feasible and their seed carefully handled during removal (to prevent further dispersal).

Repair at Site 46 will include:

1. Enter the site from the levee road (Grand Island Road) or by Steamboat Slough if construction is by barge. Bathymetric surveys indicate the repair can be done by barge.

2. Identify trees and protect in place.

3. Remove brush, fallen trees, stumps, snags, dead and dying trees.

4. Excavate and remove all soils disturbed by the erosion and fallen tree(s). Excavate a key way for the placement of launch rock.

5. Place excavated material in the interim laydown area for review by Native American monitor.

6. Shape slope for stability.

7. Place geotextile on cleaned and shaped repair surface in advance of placing rock.

8. Place launch rock in key and bring to 1 foot above waterline.

9. Place rockfill and tie in to slope.

10. Remove excavated soil from interim laydown area to contractor disposal area

No signs of underground or overhead utilities were observed.

Estimated staging, species/habitat, and historical impacts:

- Three potential staging and/or interim laydown areas, with good access and ample room for staging/laydown activities, have been identified. One site is located on the land side of the repair site on the Grand Island Vineyard property. Two others are located adjacent to the intersection of Highway 160 and Grand Island Road. For land based operations, equipment and material deliveries can easily be made to the site via Highway 160. For barge based operations, equipment and material deliveries may be made to the site via the Sacramento River.

- The narrow base of the water side of the levee exhibits characteristics of potential emergent and riparian jurisdictional wetlands (presence of hydrophytic vegetation, wetland hydrology, and hydric soils).

See **Figures A-4a** and **A-4b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-3a
Site 46, Steamboat Slough – Site Location Map

Aerial view looking south at waterside levee slope. Downed tree visible in foreground.

Aerial view looking southwest at erosion along waterside levee slope.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-3b
Site 46, Steamboat Slough - Representative Photographs

Site 47, Steamboat Slough

General Characteristics	
Waterbody	Steamboat Slough
Bank (view downstream)	Left (East)
County	Sacramento
Local Maintaining Agency	RD3 – Grand Island
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	LM 0.91
Repair Characteristics	
Repair Type	Erosion
Work Limits	NE 38.2934788312, -121.582202496 SE 38.2925680762, -121.582458118 SW 38.2926568386, -121.582968462 NW 38.2935684971, -121.582712564
Repair Length (linear feet)	270
Area of repair (acres)	0.44
Area of laydown (acres)	1.29
Estimated excavation (cubic yards)	1,144
Earthfill (cubic yards)	0
Aggregate base (tons)	0
Agriculutral soil (tons)	972
Rockfill (tons)	3,782
Launch rock (tons)	4,301
Bedding material (cubic yards)	0
Truck loads	1,106
Final bank slope (H:V)	2H:1V
OHWM (estimated elevation in feet)	5
Area of repair below OHWM (acres)	0.29
Area of repair above OHWM (acres)	0.16 (Entirely on waterside levee slope)

Repair of the site will incorporate rockfill to provide slope stability and erosion protection. The erosion of the toe has caused several large and smaller trees to fall from the bank into the slough resulting in more erosion of the bank and levee. These downed trees will require removal. Large established trees in the footprint that are not dead or dying will require protection from construction activities; see environmental findings.

The repair at Site 47 will include:

1. Enter the site from the levee road (Grand Island Road) or by Steamboat Slough if construction is by barge. Bathymetric surveys indicate the repair can be done by barge.

2. Remove brush, fallen trees, stumps, snags, dead and dying trees. Removal of most live trees will not be necessary.

3. Protect existing trees and water delivery system from the construction repair efforts.

4. Excavate and remove all soils disturbed by the erosion and fallen tree(s). Excavate a key way for the placement of launch rock.

5. Place excavated material in the interim laydown area for review by Native American monitor.

6. Shape slope for stability.

7. Place geotextile on cleaned and shaped repair surface in advance of placing rock.

8. Place launch rock in key and bring to 1 foot above waterline.

9. Place rockfill and tie in to slope.

10. Remove excavated soil from interim laydown area to contractor disposal area.

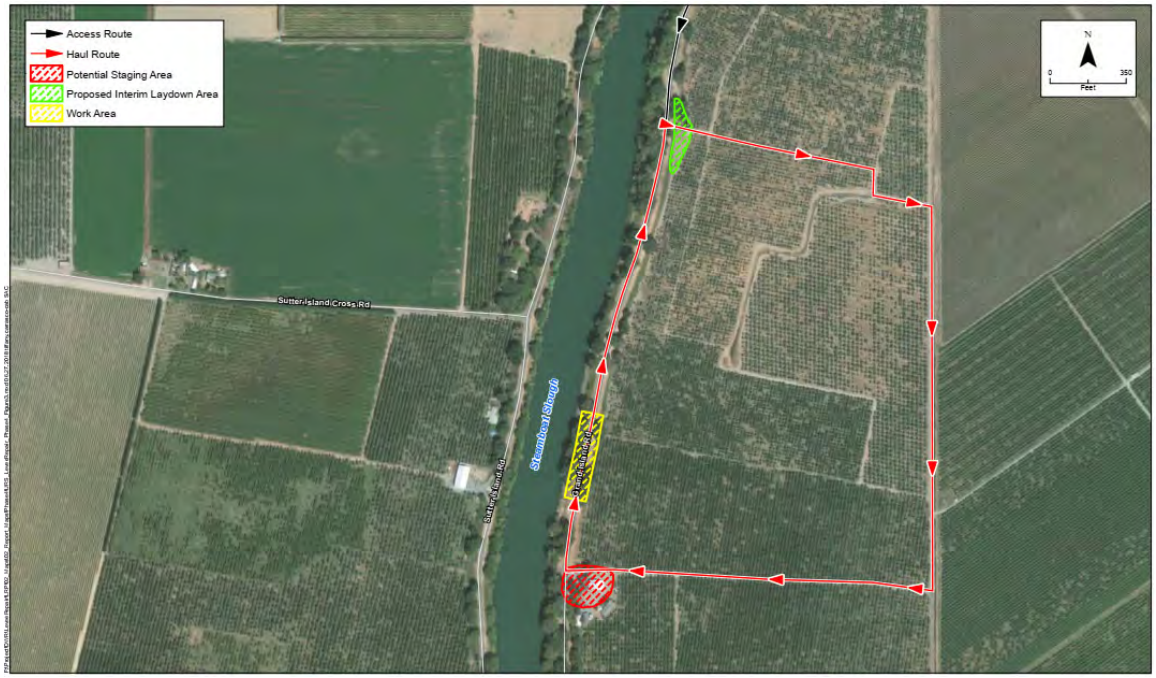
No signs of underground or overhead utilities were observed. However, one levee penetration was observed at the downstream terminus of the erosion damage site. It is a water intake system for delivering water to the land side. Due to its proximity to repair site footprint, this water delivery system will need to be protected from construction activities.

Estimated staging, species/habitat, and historical impacts:

- Two proposed areas have been identified as potential staging and interim laydown areas. Both sites are currently used for parking and staging areas for farm activities. Both sites are located on the land side adjacent to the levee and have access ramps. The proposed staging area is located near a farmhouse approximately 500 feet to the south on Grand Island Road. The proposed interim laydown area is located approximately 1800 north on Grand Island Road. For land based operations, equipment and material deliveries can be made to the site via Highway 160 to Grand Island Road. Bathymetric surveys indicate, materials, deliveries, and construction activities can be conducted by barge with deliveries arriving to the site via the Sacramento River approximately 0.95 miles upstream.

- The water side of the narrow base of the levee exhibits characteristics of potential emergent and riparian jurisdictional wetlands (presence of hydrophytic vegetation, wetland hydrology, and hydric soils).

See **Figures A-5a** and **A-5b** for site location map and representative photographs, respectively.



2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-4a
Site 47, Steamboat Slough – Site Location Map

Aerial view of waterside levee slope looking at the upstream end of the erosion damage site. Erosion damage begins at the end of the rock protection, visible on the left side of the photo, placed during emergency repairs.

Aerial view looking at water intake pipe, rock slope protection, and dead trees in erosion damage site.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-4b
Site 47, Steamboat Slough – Representative Photographs

Site 48, Sacramento River

General Characteristics	
Waterbody	Sacramento River
Bank (view downstream)	Right (West)
County	Yolo
Local Maintaining Agency	RD150 – Merrit Island
Levee Problem Characteristics	
Levee Problem	Waterside erosion, downed tree
Levee Miles (LM)	LM 3.42
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 38.3575024036, -121.528469768 SE 38.3572159903, -121.528109389 SW 38.3564941206, -121.529047284 NW 38.3567713715, -121.52939628
Repair Length (linear feet)	345
Area of repair (acres)	0.51
Area of laydown (acres)	1.56
Estimated excavation (cubic yards)	0
Earthfill (cubic yards)	0
Aggregate base (tons)	0
Agricultural soil (tons)	485
Rockfill (tons)	1,888
Launch Rock (tons)	8,145
Bedding material (cubic yards)	0
Truck Loads	526
Final bank slope (H:V)	1.5H:1V
OHWM (estimated elevation in feet)	9
Area of repair below OHWM (acres)	0.5
Area of repair above OHWM (acres)	0.01 (Entirely on waterside levee slope)

Repair of the site will incorporate rockfill to provide slope protection against further erosion and tie into existing upstream and downstream repairs. No dead trees/snags in the water were noted for removal, however; small trees and brush may need to be removed.

The repair at Site 48 will include:

1. Enter the site from the levee road (South River Road). Bathymetric survey indicates the repair can be done by barge via the Sacramento River.

2. Identify trees and protect in place. Remove brush, temporary erosion mitigations, fallen trees, stumps, snags, dead and dying trees.

3. Excavate and remove all soils disturbed by the erosion and fallen tree(s). Excavate a key way for the placement of launch rock.

4. Place excavated material in the interim laydown area for review by Native American monitor.

5. Shape slope for stability.

6. Place geotextile on cleaned and shaped repair surface in advance of placing rock.

7. Place launch rock in key and bring to 1 foot above waterline.

8. Place rockfill and tie in to slope.

9. Remove excavated soil from interim laydown area to contractor disposal area.

No utilities (overhead or underground) or levee penetrations were observed within the repair footprint.

Estimated staging, species/habitat, and historical impacts:

- The propose staging and interim laydown area is the property surrounding an abandoned barn and adjacent Pylman Vineyard farm equipment are (39500 South River Road) located approximately 1800 feet upriver. The area is on private property and will require permission from the land owner.

- The narrow base of the water side of the levee exhibits characteristics of potential emergent and riparian jurisdictional wetlands (presence of hydrophytic vegetation, wetland hydrology, and hydric soils).

See **Figures A-6a** and **A-6b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-5a
Site 48, Sacramento River – Site Location Map

View of repair site with rock slope protection visible along water side levee toe. Cracking of highway pavement appears to be associated with the levee erosion damage.

Vegetation along waterside of levee at erosion repair site.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-5b
Site 48, Sacramento River – Representative Photograph

Site 49, Elk Slough

General Characteristics	
Waterbody	Elk Slough
Bank (view downstream)	Left (East)
County	Yolo
Local Maintaining Agency	RD150 – Merrit Island
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	LM 4.39
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 38.3744704792, -121.548623509 SE 38.3742680085, -121.54862493 SW 38.3741943785, -121.549721931 NW 38.3744748653, -121.549720378
Repair Length (linear feet)	280
Area of repair (acres)	0.2
Area of laydown (acres)	0.50
Estimated excavation (cubic yards)	200
Earthfill (cubic yards)	0
Aggregate base (tons)	0
Agricultural soil (tons)	0
Rockfill (tons)	0
Launch rock (tons)	2,609
Bedding material (cubic yards)	0
Truck Loads	245
Final bank slope (H:V)	1.5H:1V
OHWM (estimated elevation in feet)	5
Area of repair below OHWM (acres)	0.11
Area of repair above OHWM (acres)	0.09 (Entirely on waterside levee slope)

The repair footprint has one downed tree and root ball in the slough that will be removed. Trees in the footprint that are not dead or dying may require protection from construction activities. Repair of the site will incorporate rebuilding any missing portion of the levee prism with compacted select levee fill material and blanketed with rockfill to provide erosion protection.

The repair at Site 49 will include:

1. Enter the site from the levee road (County Road 144).
2. Identify trees and powerlines and protect in place.

3. Remove brush and fallen tree and follow environmental guidelines due to existing elderberry groupings within the work area.

4. Excavate and remove soils disturbed by the erosion and fallen tree.

5. Place excavated material in the interim laydown area for review by Native American monitor.

6. Shape slope for stability.

7. Replace and compact lost levee material to design profile.

8. Excavate a key way for the placement of launch rock.

9. Place geotextile on cleaned, shaped and repaired surfaces in advance of placing rock.

10. Place launch rock in key and bring to 1 foot above waterline.

11. Place rockfill (erosion protection) and tie in to slope.

12. Remove excavated soil from interim laydown area to contractor disposal area.

There is an overhead powerline that crosses the slough and the left levee near the upstream end of the repair site. This will need to be avoided/protected during construction.

Estimated staging, species/habitat, and historical impacts:

- The landside toe area between the levee and adjacent field can be accessed from a ramp/ driveway east of the repair site; however, the property owner requested that his existing driveway not be used. The potential staging area is a field west of the property owner's facilities. During previous construction activities the owner's driveway was used for a detour route. The owner expressed that this not be allowed during future construction activities. Access to/from the laydown area would be to construct a temporary road up the land side embankment.

- No jurisdictional wetland delineation is recommended.

- Elderberry shrub grows at this site.

See **Figures A-7a** and **A-7b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-6a
Site 49, Elk Slough – Site Location Map

View from levee crest looking at waterside levee toe of erosion damage site. Downed tree in slough will be removed.

Aerial view looking at erosion site. Potential staging area in the background to the right.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-6b
Site 49, Elk Slough – Representative Photographs

Site 50, Elk Slough

General Characteristics	
Waterbody	Elk Slough
Bank (view downstream)	Left (East)
County	Yolo
Local Maintaining Agency	RD150 – Merrit Island
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	LM 4.47
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 38.3746370031, -121.54686338 SE 38.3743671346, -121.54682193 SW 38.3742224218, -121.548327503 NW 38.3744924286, -121.548369091
Repair Length (linear feet)	410
Area of repair (acres)	0.29
Area of laydown (acres)	0.50
Estimated excavation (cubic yards)	343
Earthfill (cubic yards)	0
Aggregate base (tons)	53
Agricultural soil (tons)	0
Rockfill (tons_	0
Launch rock (tons)	532
Bedding material (cubic yards)	0
Truck Loads	51
Final bank slope (H:V)	1.5H:1V
OHWM (estimated elevation in feet)	5
Area of repair below OHWM (acres)	0.17
Area of repair above OHWM (acres)	0.12 (Entirely on waterside levee slope)

The repair footprint has at least two downed trees in the channel that are amplifying the erosion damage and will be removed. Trees in the footprint that are not dead or dying will require protection.

The repair at Site 50 will include:

1. Enter the site from the levee road (County Road 144).
2. Remove brush and fallen trees/snags.
3. Protect existing trees.
4. Excavate and remove all soils disturbed by the erosion and fallen tree.

5. Shape slope for stability.
6. Replace and compact lost levee material to design profile. Repair of the site should incorporate rebuilding any missing portion of the levee prism with compacted select levee fill material, blanketed with rockfill to provide erosion protection.
7. Excavate a key way for the placement of launch rock.
8. Place excavated material at the laydown area for review by Native American monitors.
9. Place geotextile on cleaned, shaped and repaired surfaces in advance of placing rock.
10. Place launch rock in key and bring to 1 foot above waterline.
11. Place rockfill (erosion protection) and tie in to slope.
12. Remove excavated soil to a designated disposal area after it has been reviewed by Native American Monitors.

No signs of underground or overhead utilities were observed.

Estimated staging, species/habitat, and historical impacts:

- A potential staging area, with good access and ample room for staging/laydown activities, has been identified nearby, across the road from LMA-130 in an adjacent field starting at the land side levee toe. During the site visit the owner offered the use of this field. It could be accessed from a ramp/driveway directly across from this repair site; however, the property owner requested that his existing driveway not be used. The potential staging area is a field west of the property owner's facilities. Access to/from the laydown area would be to construct a temporary road and ramp up the land side embankment.
- No jurisdictional wetland delineation is recommended.
- Elderberry shrub grows at this site.

See **Figures A-8a** and **A-8b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-7a
Site 50, Elk Slough LMA-131 – Site Location Map

View of bank slope erosion and associated cracking of road along levee crest.

Aerial of erosion site with downed tree and in water snag.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-7b
Site 50, Elk Slough – Representative Photographs

Site 51, Elk Slough

General Characteristics	
Waterbody	Elk Slough
Bank (view downstream)	Left (East)
County	Yolo
Local Maintaining Agency	RD150 – Merrit Island
Levee Problem Characteristics	
Levee Problem	Watersideerosion, seepage
Levee Miles (LM)	LM 5.4
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 38.382184771, -121.544473848 SE 38.3819596509, -121.544572183 SW 38.3820818004, -121.545023611 NW 38.3823069029, -121.544925335
Repair Length (linear feet)	55
Area of repair (acres)	0.04
Area of laydown (acres)	0.85
Estimated excavation (cubic yards)	38
Earthfill (cubic yards)	0
Aggregate base (tons)	53
Agricultural soil (tons)	0
Rockfill (tons)	0
Launch Rock (tons)	532
Bedding materials (cubic yards)	0
Truck Loads	51
Final bank slope (H:V)	1.5H:1V
OHWM (estimated elevation in feet)	5
Area of repair below OHWM (acres)	0.02
Area of repair above OHWM (acres)	0.02 (Entirely on waterside levee slope)

The repair footprint consists of one downed tree that has landed in the channel. This tree will be removed to decrease potential erosion damage/process. Trees in the footprint that are not dead or dying may require protection. In-water work required to place clean rock to buttress the slope fill.

The repair at Site 51 will include:

1. Enter the site from the levee patrol (crest) road via County Road 144.
2. Remove brush and fallen trees/snags. Trees in the water beyond the repair area shall remain in place. Follow environmental guidelines due to exiting Elderberry shrub groupings with in the work area. Identify trees and protect in place.

3. Excavate and remove soils disturbed by the erosion and fallen tree.

4. Shape slope for stability.

5. Replace and compact lost levee material to design profile. Repair and rebuild any missing portion of the levee prism with compacted select levee fill material, blanketed with rockfill to provide erosion protection.

6. Excavate a key way for the placement of launch rock.

7. Place excavated material in interim lay down area for review by Native American monitor.

8. Place geotextile on cleaned, shaped and repaired surfaces in advance of placing rock.

9. Place launch rock in key and bring to 1 foot above waterline.

10. Place rockfill (erosion protection) and tie in to slope.

11. Remove excavated soils from interim laydown area to contractor disposal area.

There are no overhead utilities in or near the site. Additionally, no signs of levee penetrations, needing to be avoided or protected during construction, were observed.

Estimated staging, species/habitat, and historical impacts:

- A potential staging area, with good access and ample room for staging/laydown activities, has been identified nearby. The site is the patrol (crest) road and landside slope area adjacent to the erosion damage site. The landside slope is gentle at 4H:1V, thus access to/from this portion of the staging/laydown area may not require the construction of a temporary road/ramp up the land side embankment.

- No jurisdictional wetland delineation is recommended.

- Elderberry shrub grows at this site.

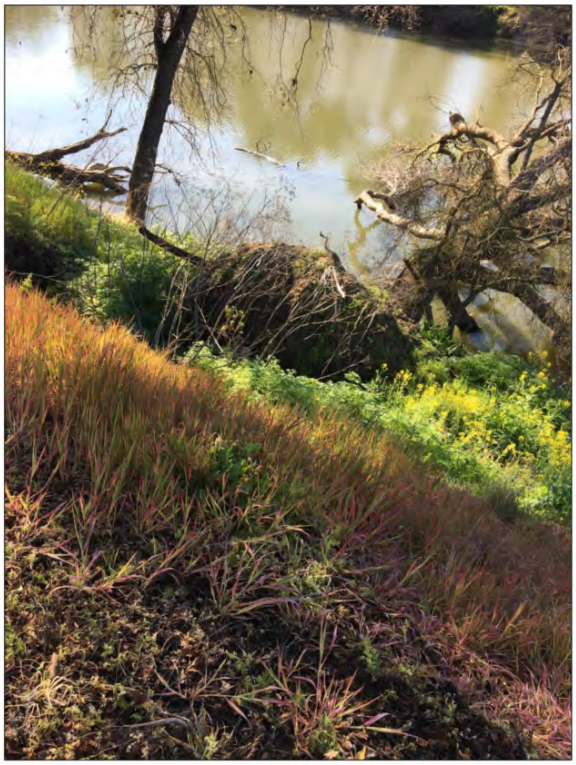
See **Figures A-9a** and **A-9b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-8a
Site 51, Elk Slough – Site Location Map

Aerial view of erosions damage site. Hole in bank left by root ball is obscured by vegetation.



View of downed oak tree and exposed root ball at erosion site.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-8b

Site 51, Elk Slough – Representative Photographs

Site 52, Elk Slough

General Characteristics	
Waterbody	Elk Slough
Bank (view downstream)	Left (East)
County	Yolo
Local Maintaining Agency	RD150 – Merrit Island
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	LM 8.05
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 38.4094626977, -121.539188616 SE 38.4092434451, -121.539136445 SW 38.4091676993, -121.539650871 NW 38.4093868949, -121.539703025
Repair Length (linear feet)	105
Area of repair (acres)	0.09
Area of laydown (acres)	1.08
Estimated excavation (cubic yards)	93
Earthfill (cubic yards)	0
Aggregate base (tons)	58
Agricultural soil (tons)	0
Rockfill (tons)	0
Launch rock (tons)	1,218
Bedding material (cubic yards)	0
Truck Loads	117
Final bank slope (H:V)	1.5H:1V
OHWM (estimated elevation in feet)	4
Area of repair below OHWM (acres)	0.04
Area of repair above OHWM (acres)	0.04 (Entirely on waterside levee slope)

The reconstructed slope will conform to the pre-existing levee slope of the failure area. Within the repair footprint there is a downed tree that is submerged (snag) in the channel. This snag should be removed to decrease the amplification of erosion damage/process. In-water work required to place clean rock to buttress the slope fill.

The repair at Site 52 will include:

1. Enter the site from the levee patrol (crest) road. Access to site via County Road 144 (downstream) or via South River Road (upstream). Levee crest road is narrow and vegetated.

2. Remove brush and fallen trees/snags.

3. Excavate and remove soils disturbed by the erosion.
4. Place excavated material in the interim laydown area for review by Native American monitor.
5. Shape slope for stability.
6. Replace and compact lost levee material to design profile.
7. Excavate a key way for the placement of launch rock.
8. Place geotextile on cleaned, shaped and repaired surfaces in advance of placing rock.
9. Place launch rock in key and bring to 1 foot above waterline.
10. Place rockfill (erosion protection) and tie in to slope
11. Remove excavated soil from interim laydown area to contractor disposal area.

There are no overhead utilities in or near the site. Additionally, no signs of levee penetrations needing to be avoided or protected during construction were observed.

Estimated staging, species/habitat, and historical impacts:

- Potential staging areas, with good access and ample room for staging/laydown activities, have been identified nearby. The sites are adjacent to the levee along the landside toe slope. They are located approximately 300 feet, 1000 feet and 1500 feet in the upstream direction. The landside slopes are gentle at 4H:1V, thus access to/from these staging/laydown areas may not require the construction of a temporary road/ramp up the land side embankment.
- No jurisdictional wetland delineation is recommended.
- Elderberry shrub grows at this site.

See **Figures A-10a** and **A-10b** for site location map and representative photographs, respectively.

SOURCE: DWR 2017

2017 Storm Damage DWR Rehabilitation Program / 130028.39

Figure A-9a
Site 52, Elk Slough – Site Location Map

Aerial view looking at southern levee waterside slope erosion damage. Erosion scarp and tension cracking have working into the levee prism and are beginning to encroach on the levee crest.

Tension cracking, visible as shadows in the waterside levee slope vegetation.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-9b

Site 52, Elk Slough – Representative Photographs

Site 53, Elk Slough

General Characteristics	
Waterbody	Elk Slough
Bank (view downstream)	Left (East)
County	Yolo
Local Maintaining Agency	RD150 – Merrit Island
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	LM 8.35
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 38.4082389643, -121.534219922 SE 38.4080458595, -121.534097794 SW 38.4079508047, -121.534377132 NW 38.4081415735, -121.534481986
Repair Length (linear feet)	60
Area of repair (acres)	0.04
Area of laydown (acres)	1.08
Estimated excavation (cubic yards)	42
Earthfill (cubic yards)	0
Aggregate base (tons)	34
Agricultural soil (tons)	0
Rockfill (tons)	0
Launch Rock (tons)	726
Bedding material (cubic yards)	0
Truck Loads	62
Final bank slope (H:V)	1.5H:1V
OHWM (estimated elevation in feet)	4
Area of repair below OHWM (acres)	0.02
Area of repair above OHWM (acres)	0.02 (Entirely on water side levee slope)

The repair footprint consists of one downed tree with its exposed rootball cavity and associated slumping of slope into the erosion damage. This tree will be removed to decrease the amplification of erosion damage/process.

The repair at Site 53 will include:

1. Enter the site from the levee patrol (crest) road. Access to site via County Road 144 (downstream) or via South River Road (upstream). The levee crest road is narrow and vegetated.
2. Remove brush and fallen trees/snags.

3. Identify utilities and protect in place.
4. Excavate and remove all soils disturbed by the erosion.
5. Shape slope for stability.
6. Place excavated material in interim lay down area for review by Native American monitors.
7. Replace and compact levee material to design profile.
8. Excavate a key way for the placement of launch rock.
9. Place geotextile on cleaned, shaped and repaired surfaces in advance of placing rock.
10. Place launch rock in key and bring to 1 foot above waterline.
11. Place rockfill (erosion protection) and tie in to slope.
12. Remove excavated soils from interim laydown area to contractor disposal area.

There are no overhead utilities at the site or signs of levee penetrations; however, approximately 50 feet in the upstream direction overhead utilities cross the levee to a water intake pump and pipe penetration. These facilities require protection during construction.

Estimated staging, species/habitat, and historical impacts:

- Potential staging areas, with good access and ample room for staging/laydown activities, have been identified nearby. The sites are located on the landside along the levee toe with the closest adjacent to the repair site and the other two are located approximately 450 feet and 1000 feet in the downstream direction. The landside slopes are gentle at 4H:1V, thus access to/from these staging/laydown areas likely may not require the construction of a temporary road/ramp up the land side embankment.

- No jurisdictional wetland delineation is recommended.

See **Figures A-11a** and **A-11b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.36

SOURCE: DWR 2017

Figure A-10a
Site 53, Elk Slough – Site Location Map

Aerial view looking at southern levee slope erosion damage. Erosion damage has felled the tree and exposed the levee to more erosion around the root ball hole.

Aerial overview looking at erosion damage site and downed tree.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-10b

Site 53, Elk Slough – Representative Photographs

Site 54, Yankee Slough

General Characteristics	
Waterbody	Yankee Slough
Bank (view downstream)	Right (North)
County	Sutter
Local Maintaining Agency	Reclamation District 1001
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	LM 0.74
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 38.9750747782, -121.480599089 SE 38.9748826709, -121.480600363 SW 38.9748796282, -121.481243362 NW 38.975044926, -121.481270149
Repair Length (linear feet)	1,700
Area of repair (acres)	0.08
Area of laydown (acres)	12.63
Estimated excavation (cubic yards)	410
Earthfill (cubic yards)	0
Aggregate base (tons)	74
Aggregate soil (tons)	335
Rockfill (tons)	853
Launch rock (tons)	0
Bedding material (cubic yards)	0
Truck Loads	297
Final bank slope (H:V)	6.5H:1V
OHWM (estimated elevation in feet)	60
Area of repair below OHWM (acres)	0
Area of repair above OHWM (acres)	0.08 (Entirely on waterside levee slope)

Repair of the site will consist of: restoring the levee to the design profile; protect against further erosion and the development of a secondary overflow channel with rockfill; and regrade the waterside ground surface from the levee toe to the outboard edge of the toe road to create a slope that will redirect overbank flows back into the main channel. Additionally, to increase flows through the slough and decrease overflow channel development due to backwater, the beaver dam, brush and debris will be removed from the main channel.

The repair at Site 54 will include:

1. Access and construction can be conducted from either the levee toe road or the levee crest road. The levee road is gated.

2. Identify power lines to be avoided.

3. Remove brush, fallen trees, stumps, snags, dead and dying trees from repair area levee slopes and toe road. Removal of live trees does not appear necessary, therefore; measures should be taken to protect them from the construction repair efforts.

4. Excavate and remove levee fill materials and toe road soils disturbed by the erosion.

5. Replace missing levee fill materials with select levee earthfill. Compact and shape slope to match design prism. For placement a rockfill protective cover on levee slope, match the levee fill surface to match the design prism minus the thickness of the rockfill cover such that the finished rockfill surface matches the design prism.

6. Regrade toe road to divert overbank flows away from levee toe.

7. Place excavated material in the interim lay down area for review by Native American monitor.

8. Place geotextile on cleaned and recompacted repair surfaces in advance of placing rock.

9. Remove excavated soil from interim laydown area to contractor disposal area.

10. Place rockfill on toe road and along toe of levee to protect soils from erosion and divert flows away from the repair locations.

11. In addition to the erosion repair to the waterside levee slope and toe road, the beaver dam along with all brush and debris should be removed from the main channel. As necessary, the channel should be straightened to improve flows downstream and reduce the possibility of the flow from overtopping the main channel and eroding the levee slope.

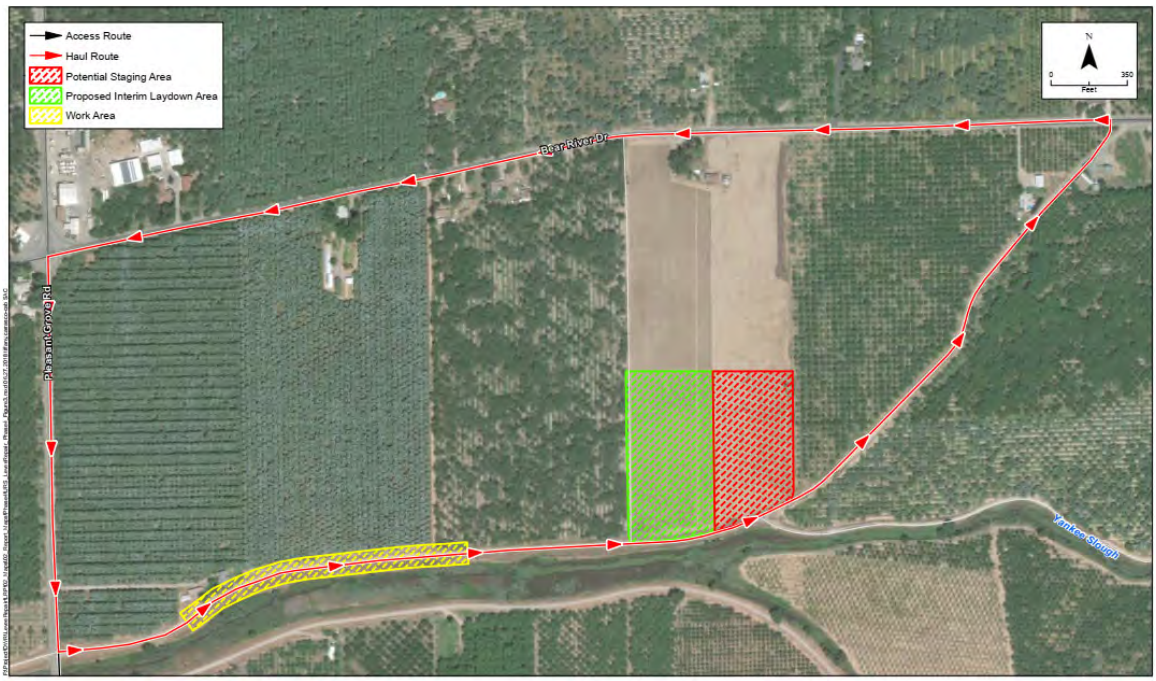
Power line poles extend parallel to Pleasant Grove Road and along the landside toe of the right levee for approximately 950 feet east from Pleasant Grove Road. These overhead utilities need to be avoided for the first 950 feet (approximately) as well as the power lines and poles crossing the slough at the end of the 950 foot run.

Estimated staging, species/habitat, and historical impacts:

- Remnant treeless orchards adjacent to the levee are proposed as a staging area and an interim laydown area. A ramp will need to be constructed to effectively utilize this site. A single ramp constructed for both staging and interim laydown area can provide access to both locations. Equipment and material deliveries can be made to the site via Bear River Drive. Potential staging and interim laydown areas are on private property and will require permission from the land owner.

- Potential jurisdictional riparian wetlands running east/west along the southern side of the site.

See **Figures A-12a** and **A-12b** for site location map and representative photographs, respectively.



2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-11a
Site 54, Yankee Slough – Site Location Map

Aerial view looking downstream at Yankee Slough. Erosion damage occurs along the waterside toe of the right levee.

Aerial view looking at erosion site and emergency repair rock placement. Beaver dam crossing the main channel is visible in the left side of the photo.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-11b

Site 54, Yankee Slough – Representative Photographs

Site 55, San Joaquin River

General Characteristics	
Waterbody	San Joaquin River
Bank (view downstream)	Left (West)
County	San Joaquin
Local Maintaining Agency	RD2095 – Paradise Cut
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	LM 1.75
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 37.7402040225, -121.296880578 SE 37.7386074596, -121.297603159 SW 37.738656501, -121.298241692 NW 37.7404897405, -121.297412397
Repair Length (linear feet)	610
Area of repair (acres)	0.89
Area of laydown (acres)	2.48
Estimated excavation (cubic yards)	841
Earthfill (cubic yards)	0
Aggregate base (tons)	548
Agricultural soil (tons)	1,365
Rockfill (tons)	5,309
Launch Rock (tons)	11,527
Bedding material (cubic yards)	0
Truck Loads	1,418
Final bank slope (H:V)	Portions of 2H:1V and 1.5H:1V
OHWM (estimated elevation in feet)	7
Area of repair below OHWM (acres)	0.59
Area of repair above OHWM (acres)	0.3 (Entirely on waterside levee slope)

Repair of the site will incorporate rockfill to provide slope stability and erosion protection. The subject levee is under the maintenance responsibility of Reclamation District (RD) 2095. Access to the levee is impeded by a locked levee gate. To access this levee a key from the RD2095 will be required.

The repair at Site 55 will include:

1. Remove brush, fallen trees, stumps, snags, dead and dying trees.
2. Excavate and remove all loose and disturbed material/soils and any potential unstable zones.
3. Place excavated material in the interim laydown area for review by Native American monitor.

4. Place clean launch rock beneath the water up to 1 foot above water level, and soil rockfill 1 foot above the water level up the levee slope to the waterside hinge; including placement of geotextile between the launch rock and soil rockfill at the time of construction.

5. Place soil filled rockfill to within 6 inches of finish grade.

6. Blend soil filled rockfill and existing soil at transition to suit existing conditions.

7. Place geotextile on cleaned and shaped repair surface in advance of placing rock.

8. Place launch rock in key and bring to 1 foot above waterline.

9. Place rockfill and tie in to slope.

10. Remove excavated soil from interim laydown area to contractor disposal area.

11. Place hydroseed on disturbed areas.

12. Place and compact aggregate base to 6 inch thickness (minimum) to rebuild travel way.

The land side slope contains overhead utilities at the toe road.

Estimated staging, species/habitat, and historical impacts:

- Two proposed areas have been identified as potential staging and interim laydown areas. Both locations have good access and ample room for staging/laydown activities. Both sites are within levee easement along the landside toe and have ramp access to the levee. The proposed staging area is approximately 2000 feet x100 feet adjacent to the work area on the landside. The interim laydown area is approximately 1500 feet north of the work area and measures about 1800 feet x100 feet along the landside toe.

- No jurisdictional wetland delineation is recommended.

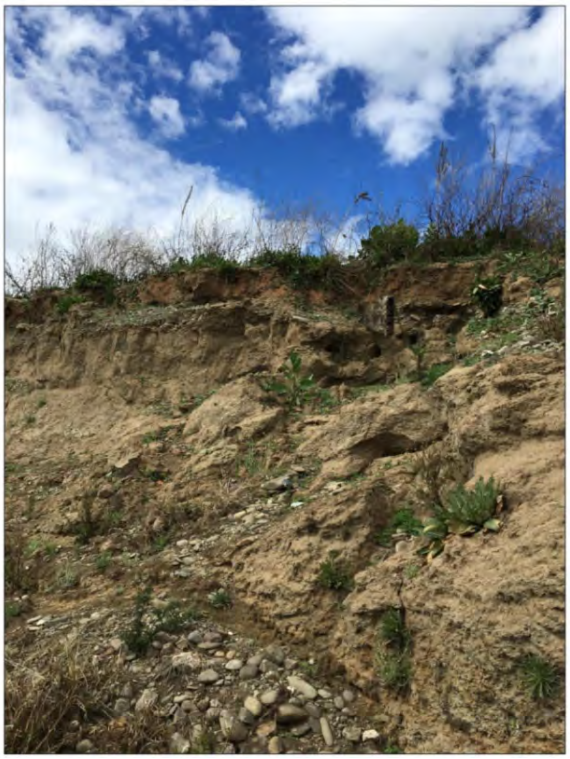
See **Figures A-13a** and **A-13b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-12a
Site 55, San Joaquin River LMA-296 – Site Location Map

View looking from upstream at waterside levee bank erosion.



View of eroded bank with tension cracks.

SOURCE: DWR 2017

2017 Storm Damage DWR Rehabilitation Program / 130028.39

Figure A-12b

Site 55, San Joaquin River LMA-296 – Representative Photographs

Phase 5 Sites

Site 58, Sacramento River

General Characteristics	
Waterbody	Sacramento River
Bank (view downstream)	Left (East)
County	Sacramento
Local Maintaining Agency	RD755 - Randall
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	LM 1.73
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 38.3380097209, -121.563674977 SE 38.3378815158, -121.56346629 SW 38.3369219704, -121.564401512 NW 38.337097015, -121.564691111
Repair Length (linear feet)	430
Area of repair (acres)	0.38
Area of laydown (acres)	1.22
Estimated excavation (cubic yards)	2,897
Earthfill (cubic yards)	0
Aggregate base (tons)	0
Agricultural soil (tons)	0
Rockfill (tons)	6,761
Launch Rock (tons)	0
Bedding material (cubic yards)	0
Truck Loads	1,993
Final bank slope (H:V)	1.7H:1V
OHWM (estimated elevation in feet)	9
Area of repair below OHWM (acres)	0.06
Area of repair above OHWM (acres)	0.32 (Entirely on waterside levee slope)

The reconstructed slope will conform to the pre-existing levee slope of the failure area. In-water work required to place clean rock to buttress the slope fill.

The repair at Site 58 will include:

1. Enter the site from the levee road (Randall Island Road) or use barge services along the Sacramento River. Bathymetric surveys indicate the repair can be done by barge,

2. Identify trees and protect in place.

3. Remove brush and fallen trees.

4. Excavate and remove soils disturbed by the erosion and fallen rock including unstable zones and loose material. In addition, excavate soils, loose materials and unstable cobbles in the transition zones adjacent to or within the failure.

5. Place excavated material in interim lay down area for review by Native American Monitors.

6. Shape back slope of levee for stability.

7. Place geotextile on cleaned and shaped repair surface of levee in advance of placing rock.

8. Excavate a key way for the placement of launch rock at the toe of the failure extending into the waterway.

9. Place clean launch rock beneath the water up to just 1 foot above water level, place geotextile and then soil filled rock fill above the water level at the time of construction.

10. Blend launch and soil filled rock fill protection at transition ends into the existing slopes of adjacent soils and/or rip rap and finish to grade

11. Remove excavated soils from interim laydown area to contractor disposal area. There are no power poles that cross the levee or other utilities at the waterside levee slope and hinge, although private and business properties with dwellings are located east of and adjacent to the landside levee slope.

There are no power poles that cross the levee or other utilities at the waterside levee slope and hinge, although private and business properties with dwellings are located east of and adjacent to the landside levee slope.

Estimated staging, species/habitat, and historical impacts:

- Only one potential staging area along the landside of the levee south of the site appeared to have adequate space to be potential staging area and interim laydown area. Access to the space is at the intersection of Route 160 and Randall Island Road in a semigravel area. There are 5 large oak trees that will require protection in staging area.

- The water side of the narrow base of the levee exhibits characteristics of potential emergent and riparian jurisdictional wetlands (presence of hydrophytic vegetation, wetland hydrology, and hydric soils.

See **Figures A-14a** and **A-14b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-13a
Site 58, Sacramento River – Site Location Map

View of erosion along waterside levee which has fallen to the levee toe.

View of waterside levee slope where erosion damage exists.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-13b

Site 58, Sacramento River – Representative Photographs

Site 59, Sacramento River

General Characteristics	
Waterbody	Sacramento River
Bank (view downstream)	Left (East)
County	Sacramento
Local Maintaining Agency	RD551 - Pearson
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	LM 5.2
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 38.2737849864, -121.537531981 SE 38.2736249704, -121.537720296 SW 38.2747054168, -121.539204926 NW 38.2748661178, -121.539015604
Repair Length (linear feet)	430
Area of repair (acres)	0.32
Area of laydown (acres)	2.69
Estimated excavation (cubic yards)	1,451
Earthfill (cubic yards)	0
Aggregate base (tons)	0
Agricultural soil (tons)	443
Rockfill (tons)	2,365
Launch Rock (tons)	0
Bedding material (cubic yards)	0
Truck Loads	970
Final bank slope (H:V)	Portions of 1.75H:1V and 2H:1V
OHWM (estimated elevation in feet)	9
Area of repair below OHWM (acres)	0
Area of repair above OHWM (acres)	0.32 (Entirely on waterside levee slope)

There is an intake pipe with associated cement structure and pumping system approximately at the mid-way point of the levee in which the pipe runs from the river to two-thirds the height of the levee. Beneath the concrete structure which houses the piping and pumping unit erosion (undermining and loss of material) has occurred. The pumping unit and piping will be protected during construction activities. The reconstructed slope will conform to the pre-existing levee slope of the failure area. In-water work required to place clean rock to buttress the slope fill.

The repair at Site 59 will include:

1. Enter the site from the levee road (River Road) or use barge services along the Sacramento River. Bathymetric surveys indicate the repair can be done by barge.

2. Identify utilities and protect in place. No utilities identified during the site visit except the pumping structure.

3. Remove brush and fallen trees.

4. Protect existing intake pipe.

5. Excavate and remove soils disturbed by the erosion and fallen rock including unstable zones and loose material. In addition, excavate soils, loose materials and unstable rip rap in the transition zones adjacent to or within the failure.

6. Evaluate existing key way; if necessary and only where required, excavate a key way for the placement of launch rock at the toe of the failure extending into the waterway.

7. Shape back slope of levee for slope stability.

8. Place excavated material in interim lay down area for review by Native American Monitors.

9. Place geotextile on cleaned and shaped repair surface of levee in advance of placing rock.

10. Place clean launch rock beneath the water up to just 1 foot above water level, place geotextile and then soil filled rock fill above the water level at the time of construction.

11. Blend launch and soil filled rock fill protection at transition ends into the existing slopes of adjacent soils and/or rip rap and finish to grade.

12. Remove excavated soils from interim laydown area to contractor disposal area.

There are no power poles with associated power lines that cross the levee or other utilities that exists at the waterside levee hinge although private and business properties with dwellings are located east of and adjacent to the landside levee.

Estimated staging, species/habitat, and historical impacts:

- Two potential areas east of the landside of the levee appeared to have the space capable of being potential staging and interim laydown area. Access to the first space is south from the site on River Road to Twin Cities Road where at the intersection is an open farm field. Access to the second space is north from the site on River Road to Vorden Road, to an open farm field approximately 0.7 miles east of the intersection of River and Vorden roads; however, access to the each of the lands would require permission from the individual land owners.

- The water side of the narrow base of the levee exhibits characteristics of potential emergent and riparian jurisdictional wetlands (presence of hydrophytic vegetation, wetland hydrology, and hydric soils.

See **Figures A-15a** and **A-15b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-14a
Site 59, Sacramento River– Site Location Map

View of waterside levee toe erosion above emergency rock repair.

View of levee slope depression beneath pipe structure and emergency rock repair along levee waterside toe.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-14b

Site 59, Sacramento River – Representative Photographs

Site 60, Sacramento River

General Characteristics	
Waterbody	Sacramento River
Bank (view downstream)	Left (East)
County	Sacramento
Local Maintaining Agency	RD551 - Pearson
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	LM 6.22
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 38.2642980714, -121.52500669 SE 38.2641510034, -121.525201034 SW 38.2644668557, -121.525599968 NW 38.2646112504, -121.525393489
Repair Length (linear feet)	120
Area of repair (acres)	0.09
Area of laydown (acres)	2.69
Estimated excavation (cubic yards)	537
Earthfill (cubic yards)	0
Aggregate base (tons)	0
Agricultural soil (tons)	238
Rockfill (tons)	927
Launch Rock (tons)	0
Bedding material (cubic yards)	0
Truck Loads	365
Final bank slope (H:V)	2H:1V
OHWM (estimated elevation in feet)	6
Area of repair below OHWM (acres)	0.01
Area of repair above OHWM (acres)	0.09 (Entirely on waterside levee slope)

The reconstructed slope will conform to the pre-existing levee slope of the failure area. In-water work required to place clean rock to buttress the slope fill.

The repair at Site 60 will include:

1. Enter the site from the levee road (County Road E13 [River Road]) or use barge services along the Sacramento River. Bathymetric surveys indicate the repair can be done by barge.
2. Identify utilities and protect in place. No utilities identified during the site visit.
3. Remove brush and fallen trees.

4. Excavate and remove soils disturbed by the erosion and fallen rock including unstable zones and loose material. In addition, excavate soils, loose materials and unstable rip rap in the transition zones adjacent to or within the failure.

5. Evaluate existing key way; if necessary and only where required, excavate a key way for the placement of launch rock at the toe of the failure extending into the waterway.

6. Shape back slope of levee slope for stability.

7. Place excavated material in interim lay down area for review by Native American Monitors.

8. Place geotextile on cleaned and shaped repair surface of levee in advance of placing rock.

9. Place clean launch rock beneath the water up to just 1 foot above water level, place geotextile and then soil filled rock fill above the water level at the time of construction.

10. Blend launch and soil filled rock fill protection at transition ends into the existing slopes of adjacent soils and/or rip rap and finish to grade

11. Remove excavated soils from interim laydown area to contractor disposal area.

There are no power poles with associated powerlines that cross the levee or other utilities that exists at the waterside levee hinge. Private and business properties with dwellings are located east of and adjacent to the landside levee. There is a small, private boat dock south of the site along the Sacramento River.

Estimated staging, species/habitat, and historical impacts:

- Two potential areas east of the landside of the levee appeared to have adequate space to be potential staging and interim laydown area. Access to the first space is south from the site on County Road E13 to Twin Cities Road where at the intersection is an open farm field. Access to the second space is north from the site on County Road E13 to Vorden Road, to an open farm field approximately 0.7 miles east of the intersection of River and Vorden Roads; however, access to the each of the lands would require permission from the individual land owners.

- The water side of the narrow base of the levee exhibits characteristics of potential emergent and riparian jurisdictional wetlands (presence of hydrophytic vegetation, wetland hydrology, and hydric soils.

See **Figures A-16a** and **A-16b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-15a
Site 60, Sacramento River – Site Location Map

View of waterside levee erosion rock placement repair.

View of diversion structure at boat dock at southern end of erosion damage site.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-15b

Site 60, Sacramento River – Representative Photographs

Site 61, Sacramento River

General Characteristics	
Waterbody	Sacramento River
Bank (view downstream)	Right (West)
County	Yolo
Local Maintaining Agency	RD999 - Netherlands
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	LM 0.1
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 38.4180712697, -121.525169492 SE 38.4151982473, -121.523273052 SW 38.4150295029, -121.523792136 NW 38.4178761766, -121.52566413
Repair Length (linear feet)	1,000
Area of repair (acres)	1.15
Area of laydown (acres)	1.89
Estimated excavation (cubic yards)	6,319
Earthfill (cubic yards)	0
Aggregate base (tons)	0
Agricultural soil (tons)	3,569
Rockfill (tons)	13,880
Launch Rock (tons)	5,886
Bedding material (cubic yards)	0
Truck Loads	4,778
Final bank slope (H:V)	Portions of 1.5H:1V and 2H:1V
OHWM (estimated elevation in feet)	9
Area of repair below OHWM (acres)	0.33
Area of repair above OHWM (acres)	0.83 (Entirely on waterside levee slope)

The reconstructed slope will conform to the pre-existing levee slope of the failure area. In-water work required to place clean rock to buttress the slope fill.

The repair at Site 61 will include:

1. Enter the site from the levee road (South River Road) or use barge services along the Sacramento River. Bathymetric surveys indicate the repair can be done by barge.

2. Identify trees, utilities, and wooden dock and protect in place.

3. Identify and remove erosion control poles.

4. Remove brush, fallen trees, and metal staircase on slope.

5. Excavate and remove all soils disturbed by the erosion and fallen rock including unstable zones and loose material. In addition, excavate soils, loose materials and unstable rip rap rock in the transition zones adjacent to or within the failure.

6. Excavate a key way for the placement of launch rock at the toe of the failure extending into the waterway.

7. Shape backslope of levee slope for stability.

8. Place excavated material in interim lay down area for review by Native American Monitors.

9. Place geotextile on cleaned and shaped repair surface of levee in advance of placing rock.

10. Place clean launch rock beneath the water up to just 1 foot above water level, place geotextile and then soil filled rock fill above the water level at the time of construction.

11. Blend launch and soil filled rock fill protection at transition ends into the existing slopes of adjacent soils and/or rip rap and finish to grade.

12. Remove excavated soils from interim laydown area to contractor disposal.

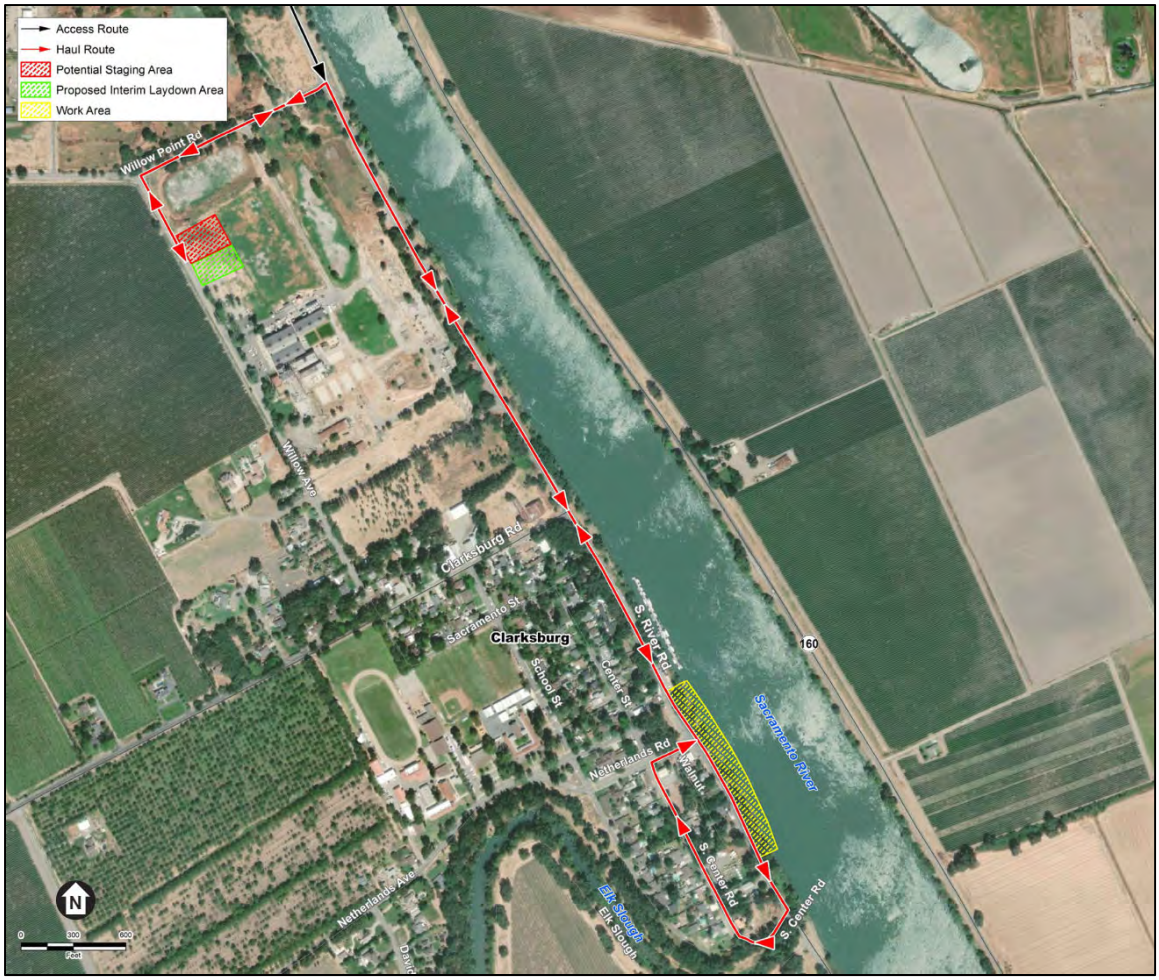
There are two power poles with associated powerlines that exists within the limit of work. Coordination with local utilities for relocation and protection will need to be considered during the remediation design and construction. There is also a wooden deck with a ramp that is to be protected in place.

Estimated staging, species/habitat, and historical impacts:

- One potential area along the landside of the levee north of the site appeared to have adequate space to be potential staging and laydown area. Access to the space is by an earth ramp; however, access to the land would require permission from the land owner. Another potential staging area is next to the Old Sugar Mill. The area is an open, flat, gravel lot with access via Willow Avenue.

- The water side of the narrow base of the levee exhibits characteristics of potential emergent and riparian jurisdictional wetlands (presence of hydrophytic vegetation, wetland hydrology, and hydric soils).

See **Figures A-17a** and **A-17b** for site location map and representative photographs, respectively.



SOURCE: DWR 2017

2017 Storm Damage DWR Rehabilitation Program / 130028.39

Figure A-16a
Site 61, Sacramento River – Site Location Map

View of boat dock with erosion occurring behind boat dock.

View of erosion along bank. Erosion control poles and boat dock visible in background.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-16b

Site 61, Sacramento River – Representative Photographs

Site 62, San Joaquin River

General Characteristics	
Waterbody	San Joaquin River
Bank (view downstream)	Left (West)
County	San Joaquin
Local Maintaining Agency	RD524 – Middle Robert's Island
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	LM 4.53
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 37.892578109, -121.327980072 SE 37.8918124146, -121.328035327 SW 37.8919067294, -121.328326405 NW 37.892475613, -121.328287413
Repair Length (linear feet)	125
Area of repair (acres)	0.19
Area of laydown (acres)	0.84
Estimated excavation (cubic yards)	2,021
Earthfill (cubic yards)	0
Aggregate base (tons)	146
Agricultural soil (tons)	601
Rockfill (tons)	2,336
Launch Rock (tons)	889
Bedding material (cubic yards)	31
Truck loads	1,388
Final bank slope (H:V)	1.7H:1V
OHWM (estimated elevation in feet)	6
Area of repair below OHWM (acres)	0.03
Area of repair above OHWM (acres)	0.16 (Entirely on waterside levee slope)

The reconstructed slope will conform to the pre-existing levee slope of the failure area. In-water work required to place clean rock to buttress the slope fill. The repair at Site 62 will include:

1. Enter the site from the levee road. The levee road is gated.
2. Identify utilities and protect in place. No utilities were identified during site visit.
3. Remove dead tree and construction debris.
4. Excavate and remove all soils disturbed by the erosion including unstable zones and loose material. In addition, excavate soils, loose materials and unstable rip rap in the transition zones adjacent to or within the failure.

5. Evaluate existing key way; if necessary and only where required, excavate a key way for the placement of launch rock at the toe of the failure extending into the waterway.

6. Shape backslope of levee for stability.

7. Place excavated material in interim lay down area for review by Native American Monitors.

8. Place geotextile on cleaned and shaped repair surface of levee in advance of placing rock.

9. Place clean launch rock beneath the water up to just 1 foot above water level, place geotextile and then place rip rap rock above the water level at the time of construction.

10. Place soil filled rock fill from 1 foot above water to top of repair. There are no power poles with associated powerlines that cross the levee or other utilities that exists at the waterside levee hinge.

11. Blend launch and rock fill protection at transition ends into the existing slopes of adjacent soils and/or rip rap and finish to grade.

12. Remove excavated soils from interim laydown area to contractor disposal area.

13. Hydroseed soil filled rock fill and disturbed laydown and staging areas.

There are no power poles with associated powerlines that cross the levee or other utilities that exists at the waterside levee hinge.

Estimated staging, species/habitat, and historical impacts:

- One potential area south and adjacent to the landside of the levee appeared to have adequate space to be potential staging and laydown area. Access to the space is off the levee road from the site to an open farm field to the southwest; however, access to the land would require permission from the individual land owner.

See **Figures A-18a** and **A-18b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-17a
Site 62, San Joaquin River– Site Location Map

View looking south of eroded bank with construction debris along waterside levee slope.

View of bank loss and construction debris

SOURCE: DWR 2017

2017 Storm Damage DWR Rehabilitation Program / 130028.39

Figure A-17b

Site 62, San Joaquin River – Representative Photographs

Site 63, Sacramento River

General Characteristics	
Waterbody	Sacramento River
Bank (view downstream)	Right (West)
County	Yolo
Local Maintaining Agency	RD307 - Lisbon
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	NA
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 38.4320717757, -121.532960796 SE 38.4311286749, -121.533064056 SW 38.431147861, -121.533494996 NW 38.4321281436, -121.533357818
Repair Length (linear feet)	210
Area of repair (acres)	0.42
Area of laydown (acres)	2.12
Estimated excavation (cubic yards)	2,746
Earthfill (cubic yards)	0
Aggregate base (tons)	0
Agricultural soil (tons)	360
Rockfill (tons)	3,761
Launch Rock (tons)	2,573
Bedding material (cubic yards)	0
Truck Loads	1,934
Final bank slope (H:V)	2H:1V
OHWM (estimated elevation in feet)	9
Area of repair below OHWM (acres)	0.15
Area of repair above OHWM (acres)	0.27 (Entirely on waterside levee slope)

The reconstructed slope will conform to the pre-existing levee slope of the failure area. In-water work required to place clean rock to buttress the slope fill.

The repair at Site 63 will include:

1. Enter the site from the levee road (County Road E9) or use barge services along the Sacramento River. Bathymetric surveys indicate the repair can be done by barge.
2. Identify trees and utilities and protect in place.
3. Remove brush and fallen trees.

4. Excavate and remove soils disturbed by the erosion and fallen rock including unstable zones and loose material. In addition, excavate soils and loose rip rap in the transition zones adjacent to failure.

5. Excavate a key way for the placement of launch rock at the toe of the failure extending into the waterway.

6. Shape backslope of levee for stability.

7. Place excavated material in interim lay down area for review by Native American Monitors.

8. Place geotextile on cleaned and shaped repair surface of levee in advance of placing rock.

9. Place clean launch rock beneath the water up to just 1 foot above water level, place geotextile and then soil filled rock fill above the water level at the time of construction.

10. Blend launch and soil filled rock fill protection at transition ends into the existing slopes of adjacent soils and/or rip rap and finish to grade.

Remove excavated soils from interim laydown area to contractor disposal area.

There is a pump station with a 4-inch and 6-inch steel conduit to be protected in place. There are no overhead powerline that crosses the levee; however, traffic guard rails exist at the landside levee hinge and private properties with dwellings are located west of and adjacent to the landside levee.

Estimated staging, species/habitat, and historical impacts:

- One potential area along the landside of the levee north of the site appeared to have adequate space to be potential staging and laydown area. Access to the space is by an earth ramp with some gravel into a farming storage yard; however, access to the land would require permission from the land owner. Another potential staging area is next to the Old Sugar Mill. The area is an open, flat, gravel lot with access via Willow Ave.

- The water side of the narrow base of the levee exhibits characteristics of potential emergent and riparian jurisdictional wetlands (presence of hydrophytic vegetation, wetland hydrology, and hydric soils).

See **Figures A-19a** and **A-19b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-18a
Site 63, Sacramento River – Site Location Map

View of erosion and rock placement from emergency erosion repairs visible along waterside toe.

View at east extent of repair site showing erosion along waterside levee toe.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-18b

Site 63, Sacramento River – Representative Photographs

Site 65, Sacramento River, (included with Site 63 Design Plan)

General Characteristics	
Waterbody	Sacramento River
Bank (view downstream)	Right (West)
County	Yolo
Local Maintaining Agency	RD307 - Lisbon
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	LM 6.48
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 38.4311286749, -121.533064056 SE 38.4306577888, -121.533012329 SW 38.4305928174, -121.533453962 NW 38.431147861, -121.533494996
Repair Length (linear feet)	150
Area of repair (acres)	0.27
Area of laydown (acres)	2.12
Estimated excavation (cubic yards)	577
Earthfill (cubic yards)	0
Aggregate base (tons)	0
Agricultural soil (tons)	0
Rockfill (tons)	0
Launch Rock (tons)	1,677
Bedding material (cubic yards)	0
Truck Loads	414
Final bank slope (H:V)	2H:1V
OHWM (estimated elevation in feet)	9
Area of repair below OHWM (acres)	0.10
Area of repair above OHWM (acres)	0.17 (Entirely on waterside levee slope)

The reconstructed slope will conform to the pre-existing levee slope of the failure area. In-water work required to place clean rock to buttress the slope fill.

The repair at Site 65 will include:

1. Enter the site from the levee road (County Road E9) or use barge services along the Sacramento River. Bathymetric surveys indicate the repair can be conducted by barge.
2. Identify trees and protect in place.
3. Remove brush and fallen trees.

4. Excavate and remove all soils disturbed by the erosion and fallen rock including unstable zones and loose material. In addition, excavate soils and loose rip rap in the transition zones adjacent to failure.

5. Excavate a key way for the placement of launch rock at the toe of the failure extending into the waterway.

6. Shape back slope of levee slope for stability.

7. Place excavated material in interim lay down area for review by Native American Monitors.

8. Place geotextile on cleaned and shaped repair surface of levee in advance of placing rock.

9. Place clean launch rock beneath the water up to just 1 foot above water level, place geotextile and then soil filled rock fill above the water level at the time of construction.

10. Blend launch and soil filled rock fill protection at transition ends into the existing slopes of adjacent soils and/or rip rap and finish to grade.

11. Remove excavated soils from interim laydown area to contractor disposal area.

There are no overhead powerline that crosses the levee; however, a traffic guard rail exists at the landside levee hinge and private properties with dwellings are located west of and adjacent to the landside levee. No signs of underground utilities or levee penetrations were observed.

Estimated staging, species/habitat, and historical impacts:

- One potential area along the landside of the levee north of the site appeared to have adequate space to be potential staging and laydown area. Access to the space is by a earth ramp with some gravel into a farming storage yard; however, access to the land would require permission from the land owner. Another potential staging area is next to the Old Sugar Mill. The area is an open, flat, gravel lot with access via Willow Ave.

- The water side of the narrow base of the levee exhibits characteristics of potential emergent and riparian jurisdictional wetlands (presence of hydrophytic vegetation, wetland hydrology, and

See **Figures A-20a** and **A-20b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-19a
Site 65, Sacramento River – Site Location Map

View of erosion repair site where bank erosion occurred along waterside levee toe.

View of northeast extent of repair site where emergency rock was placed.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-19b

Site 65, Sacramento River – Representative Photographs

Site 67, Sacramento River (included with Site 63 Design Plan)

General Characteristics	
Waterbody	Sacramento River
Bank (view downstream)	Right (West)
County	Yolo
Local Maintaining Agency	RD307 - Lisbon
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	LM 6.51
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 38.4306577888, -121.533012329 SE 38.4300739165, -121.532872141 SW 38.4300089473, -121.533323164 NW 38.4305928174, -121.533453962
Repair Length (linear feet)	180
Area of repair (acres)	0.24
Area of laydown (acres)	2.12
Estimated excavation (cubic yards)	294
Earthfill (cubic yards)	0
Aggregate base (tons)	0
Agricultural soil (tons)	0
Rockfill (tons)	0
Launch Rock (tons)	1,139
Bedding material (cubic yards)	0
Truck Loads	225
Final bank slope (H:V)	2H:1V
OHWM (estimated elevation in feet)	9
Area of repair below OHWM (acres)	0.09
Area of repair above OHWM (acres)	0.15 (Entirely on waterside levee slope)

The reconstructed slope will conform to the pre-existing levee slope of the failure area. In-water work required to place clean rock to buttress the slope fill.

The repair at Site 67 will include:

1. Enter the site from the levee road (County Road E9) or use barge services along the Sacramento River. Bathymetric surveys indicate the repair can be done by barge.

2. Remove brush and fallen trees.

3. Identify existing trees and infrastructure and protected in place.

4. Excavate and remove all soils disturbed by the erosion and fallen rock including unstable zones and loose material. In addition, excavate soils and loose rip rap in the transition zones adjacent to failure.

5. Excavate a key way for the placement of launch rock at the toe of the failure extending into the waterway.

6. Shape back slope of levee for stability.

7. Place excavated material in interim laydown area for review by Native American Monitors.

8. Place geotextile on cleaned and shaped repair surface of levee in advance of placing rock.

9. Place clean launch rock beneath the water up to just 1 foot above water level, place geotextile and then soil filled rock fill above the water level at the time of construction.

10. Blend launch and soil filled rock fill protection at transition ends into the existing slopes of adjacent soils and/or rip rap and finish to grade.

11. Remove excavated soils from interim laydown area to contractor disposal.

Three existing 12 inch steel conduits are to be protected in place. There are no overhead powerline that crosses the levee; however, a traffic guard rail exists at the landside levee hinge and private properties with dwellings are located west of and adjacent to the landside levee. No signs of underground utilities or levee penetrations were observed.

Estimated staging, species/habitat, and historical impacts:

- One potential area along the landside of the levee north of the site appeared to have adequate space to be potential staging and laydown area. Access to the space is by an earth ramp with some gravel into a farming storage yard; however, access to the land would require permission from the land owner. Another potential staging area is next to the Old Sugar Mill. The area is an open, flat, gravel lot with access via Willow Avenue.

- The water side of the narrow base of the levee exhibits characteristics of potential emergent and riparian jurisdictional wetlands (presence of hydrophytic vegetation, wetland hydrology, and hydric soils).

See **Figures A-21a** and **A-21b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-20a
Site 67, Sacramento River – Site Location Map

View of northeast extent of repair site. Live trees will be protected during construction.

View of waterside levee erosion along waterside toe.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-20b

Site 67, Sacramento River – Representative Photographs

Site 69, San Joaquin River

General Characteristics	
Waterbody	San Joaquin River
Bank (view downstream)	Left (West)
County	San Joaquin
Local Maintaining Agency	RD524 – Middle Robert's Island
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	LM 1.3
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 37.9326696872, -121.328514759 SE 37.9318998771, -121.32815759 SW 37.931829746, -121.328363581 NW 37.932618082, -121.328725609
Repair Length (linear feet)	350
Area of repair (acres)	0.23
Area of laydown (acres)	1.61
Estimated excavation (cubic yards)	1,741
Earthfill (cubic yards)	0
Aggregate base (tons)	197
Agricultural soil (tons)	570
Rockfill (tons)	2,217
Launch Rock (tons)	826
Bedding material (cubic yards)	223
Truck Loads	1,313
Final bank slope (H:V)	1.5H:1V
OHWM (estimated elevation in feet)	6
Area of repair below OHWM (acres)	0.04
Area of repair above OHWM (acres)	0.19 (Entirely on waterside levee slope)

The reconstructed slope will conform to the pre-existing levee slope of the failure area. In-water work required to place clean rock to buttress the slope fill.

The levee road is gated. For access, check in with Stockton Wastewater Treatment Plant (WWTP).

The repair at Site 69 will include:

1. Identify trees and utilities and protect in place.
2. Remove brush.

3. Excavate and remove all soils disturbed by the erosion including unstable zones and loose material. In addition, excavate soils, loose materials and unstable rip rap in the transition zones adjacent to or within the failure.

4. Evaluate existing key way; if necessary and only where required, excavate a key way for the placement of launch rock at the toe of the failure extending into the waterway.

5. Shape backslope of levee for stability.

6. Place excavated material in interim lay down area for review by Native American Monitors.

7. Place geotextile and then place rip rap rock from the bottom of key way to 1 foot above water during the time of construction.

8. Place 6 inches of bedding material (no geotextile) from one foot above the water to the top of repair.

9. Place soil filled rock fill from 1 foot above water to top of repair.

10. Blend launch and rock fill protection at transition ends into the existing slopes of adjacent soils and/or rip rap and finish to grade.

11. Remove excavated soils from interim laydown area to contractor disposal area.

12. Hydroseed soil filled rock fill and disturbed laydown and staging areas.

There are utilities that exist within and adjacent to the repair site. There are 2 pipes (one below the crown and one 17 feet below crown to protect in place). Near the southern end of the site there is a pipe that penetrates through the levee bank and down the waterside slope. To the south, adjacent to the site, is a former repair site having rip rap repair. To the west, power poles and power lines run along the landside levee toe.

Estimated staging, species/habitat, and historical impacts:

- Only one potential area west and approximately 4,000 feet from the site northwest of the levee appeared to have adequate space to be potential staging and interim laydown area. Access to the space is off and on to the waste treatment plant road adjacent to the levee running in a circular pattern around the waste water treatment plant ponds west of the repair site; however, access to the facility would require permission from the City of Stockton WWTP.

- The water side of the narrow base of the levee exhibits characteristics of potential emergent and riparian jurisdictional wetlands (presence of hydrophytic vegetation, wetland hydrology, and hydric soils).

- Elderberry shrubs occur within the site.

See **Figures A-22a** and **A-22b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-21a
Site 69, San Joaquin River – Site Location Map

View looking south showing waterside levee erosion.

View of waterside erosion, continues throughout the entire repair site.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-21b

Site 69, San Joaquin River – Representative Photographs

Site 70, San Joaquin River

General Characteristics	
Waterbody	San Joaquin River
Bank (view downstream)	Left (West)
County	San Joaquin
Local Maintaining Agency	RD524 – Middle Robert's Island
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	LM 0.91
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 37.9354310651, -121.333140126 SE 37.9352753762, -121.333168743 SW 37.9352998232, -121.333317549 NW 37.9354511759, -121.33328671
Repair Length (linear feet)	60
Area of repair (acres)	0.03
Area of laydown (acres)	1.60
Estimated excavation (cubic yards)	95
Earthfill (cubic yards)	0
Aggregate base (tons)	15
Agricultural soil (tons)	46
Rockfill (tons)	178
Launch Rock (tons)	107
Bedding material (cubic yards)	19
Truck Loads	82
Final bank slope (H:V)	2H:1V
OHWM (estimated elevation in feet)	6
Area of repair below OHWM (acres)	0.01
Area of repair above OHWM (acres)	0.02 (Entirely on waterside levee slope)

The reconstructed slope will conform to the pre-existing levee slope of the failure area. In-water work required to place clean rock to buttress the slope fill.

The levee road is gated. For access, check in with City of Stockton WWTP.

The repair at Site 70 will include:

1. Identify trees and protect in place.
2. Remove brush.

3. Excavate and remove all soils disturbed by the erosion including unstable zones and loose material. In addition, excavate soils, loose materials and unstable rip rap in the transition zones adjacent to or within the failure.

4. Evaluate existing key way; if necessary and only where required, excavate a key way for the placement of launch rock at the toe of the failure extending into the waterway.

5. Shape backslope of levee for stability.

6. Place excavated material in interim lay down area for review by Native American Monitors.

7. Place geotextile and then place rip rap rock from the bottom of key way to 1 foot above water during the time of construction.

8. Place 6 inches of bedding material (no geotextile) from one foot above the water to the top of repair.

9. Place soil filled rock fill from 1 foot above water to top of repair.

10. Blend launch and rock fill protection at transition ends into the existing slopes of adjacent soils and/or rip rap and finish to grade.

11. Remove excavated soils from interim laydown area to contractor disposal area.

12. Hydroseed soil filled rock fill and disturbed laydown and staging areas.

There are no power poles with associated powerlines that cross the levee; however, there are other utilities that exist at the waterside levee hinge. To the south of the site is a piping structure associated with the waste water treatment facility traveling through the levee bank, as well as, a small pipe that protrudes from the levee waterside bank.

Estimated staging, species/habitat, and historical impacts:

- Only one potential area west and approximately 1,800 feet from the site west of the levee appeared to have adequate space to be potential staging and laydown area. Access to the space is off and on to the waste treatment plant road adjacent to the levee running in a circular pattern around the waste water treatment plant ponds west of the repair site; however, access to the facility requires permission from the City of Stockton WWTP.

- The water side of the narrow base of the levee exhibits characteristics of potential emergent and riparian jurisdictional wetlands (presence of hydrophytic vegetation, wetland hydrology, and hydric soils).

- Elderberry shrubs occur adjacent to the laydown area.

See **Figures A-23a** and **A-23b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-22a
Site 70, San Joaquin River – Site Location Map

Close up view of erosion on waterside levee bank and loss of waterside toe.

View of piping, rip rap, construction debris, and storm water erosion adjacent to repair

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-22b

Site 70, San Joaquin River – Representative Photographs

Site 71, Old River

General Characteristics	
Waterbody	Old River
Bank (view downstream)	Right (North)
County	San Joaquin
Local Maintaining Agency	RD544 – Upper Robert's Island
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	LM 2.18
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 37.8205768442, -121.345912535 SE 37.8202920837, -121.345623884 SW 37.8201448018, -121.345826348 NW 37.8204013877, -121.346177484
Repair Length (linear feet)	130
Area of repair (acres)	0.07
Area of laydown (acres)	0.61
Estimated excavation (cubic yards)	372
Earthfill (cubic yards)	0
Aggregate base (tons)	47
Agricultural soil (tons)	0
Rockfill (tons)	405
Launch Rock (tons)	412
Bedding material (cubic yards)	0
Truck Loads	256
Final bank slope (H:V)	1.5H:1V
OHWM (estimated elevation in feet)	6
Area of repair below OHWM (acres)	0.03
Area of repair above OHWM (acres)	0.04 (Entirely on waterside levee slope)

The reconstructed slope will conform to the pre-existing levee slope of the failure area. In-water work required to place clean rock to buttress the slope fill.

The repair at Site 71 will include:

1. Enter the site from the levee road.
2. Identify trees and utilities and protect in place.
3. Remove brush and fallen trees. Excavate and remove all soils disturbed by the erosion including unstable zones and loose material. In addition, excavate soils, loose materials and unstable rip rap in the transition zones adjacent to or within the failure.

4. Evaluate existing key way; if necessary and only where required, excavate a key way for the placement of launch rock at the toe of the failure extending into the waterway.

5. Shape back slope of levee for slope stability.

6. Place excavated material in interim lay down area for review by Native American Monitors.

7. Place geotextile on cleaned and shaped repair surface of levee in advance of placing rock.

8. Place clean launch rock beneath the water up to just 1 foot above water level, place geotextile and then place rip rap rock above the water level at the time of construction.

9. Place soil filled rock fill from 1 foot above water to top of repair.

10. Blend launch and rock fill protection at transition ends into the existing slopes of adjacent soils and/or rip rap and finish to grade.

11. Remove excavated soils from interim laydown area to contractor disposal area.

12. Hydroseed soil filled rock fill and disturbed laydown and staging areas.

There are no power poles with associated powerlines that cross the levee or other utilities that exists at the waterside levee hinge. To the northwest of the site an intake structure with associated piping traveling up and through the levee bank exists.

Estimated staging, species/habitat, and historical impacts:

- Only one potential area southeast and approximately 1,475 feet from the site north of the levee appeared to have adequate space to be potential staging and laydown area. Access to the space is off and on to the levee road adjacent to the levee running north and south; however, access to the land would require permission from the individual land owner.

- The water side of the narrow base of the levee exhibits characteristics of potential emergent and riparian jurisdictional wetlands (presence of hydrophytic vegetation, wetland hydrology, and hydric soils).

- Elderberry shrub is present at this site.

See **Figures A-24a** and **A-24b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-23a
Site 71, Old River – Site Location Map

Aerial view of erosion and emergency rock placement repair under tree.

View of pipe through levee west of erosion repair site.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-23b
Site 71, Old River – Representative Photographs

Site 72, Old River

General Characteristics	
Waterbody	Old River
Bank (view downstream)	Right (West)
County	San Joaquin
Local Maintaining Agency	RD544 – Upper Robert's Island
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	LM 5.36
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 37.8139504355, -121.31945511 SE 37.8134674389, -121.318952409 SW 37.8132873057, -121.319227786 NW 37.8137454064, -121.319767749
Repair Length (linear feet)	220
Area of repair (acres)	0.13
Area of laydown (acres)	0.50
Estimated excavation (cubic yards)	677
Earthfill (cubic yards)	0
Aggregate base (tons)	104
Agricultural soil (tons)	281
Rockfill (tons)	1,094
Launch Rock (tons)	703
Bedding material (cubic yards)	0
Truck Loads	496
Final bank slope (H:V)	2H:1V
OHWM (estimated elevation in feet)	6
Area of repair below OHWM (acres)	0.03
Area of repair above OHWM (acres)	0.10 (Entirely on waterside levee slope)

The reconstructed slope will conform to the pre-existing levee slope of the failure area. In-water work required to place clean rock to buttress the slope fill.

The repair at Site 72 will include:

1. Enter the site from the levee road.
2. Identify trees and protect in place.
3. Remove brush and fallen trees, protect existing trees. Excavate and remove all soils disturbed by the erosion including unstable zones and loose material. In addition, excavate soils, loose materials and unstable rip rap in the transition zones adjacent to or within the failure.

4. Evaluate existing key way; if necessary and only where required, excavate a key way for the placement of launch rock at the toe of the failure extending into the waterway.

5. Shape back slope of levee slope for stability.

6. Place excavated material in interim lay down area for review by Native American Monitors.

7. Place geotextile on cleaned and shaped repair surface of levee in advance of placing rock.

8. Place clean launch rock beneath the water up to just 1 foot above water level, place geotextile and then place rip rap rock above the water level at the time of construction.

9. Place soil filled rock fill from 1 foot above water to top of repair.

10. Blend launch and rock fill protection at transition ends into the existing slopes of adjacent soils and/or rip rap and finish to grade.

11. Remove excavated soils from interim laydown area to contractor disposal area.

12. Hydroseed soil filled rock fill and disturbed laydown and staging areas.

There are no power poles with associated powerlines that cross the levee or other utilities that exists at the waterside levee hinge.

Estimated staging, species/habitat, and historical impacts:

- Only one potential area northwest and approximately 2,900 feet from the site west of the levee appeared to have adequate space to be potential staging and laydown area. Access to the space is off the levee road from the site to an open farm field to the northwest; however, access to the land would require permission from the individual land owner.

- The water side of the narrow base of the levee exhibits characteristics of potential emergent and riparian jurisdictional wetlands (presence of hydrophytic vegetation, wetland hydrology, and hydric soils).

See **Figures A-25a** and **A-25b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-24a
Site 72, Old River – Site Location Map

Aerial view of erosion along waterside levee slope. Emergency rock repairs visible beneath existing tree.

View of waterside levee slope. Downed tree visible in the repair site.

SOURCE: DWR 2017

2017 Storm Damage DWR Rehabilitation Program / 130028.39

Figure A-24b

Site 72, Old River – Representative Photographs

Site 73, Old River

General Characteristics	
Waterbody	Old River
Bank (view downstream)	Right (West)
County	San Joaquin
Local Maintaining Agency	RD544 – Upper Robert's Island
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	LM 4.99
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 37.8185148183, -121.318687589 SE 37.8183382347, -121.318771659 SW 37.8186233536, -121.319373608 NW 37.8187881999, -121.319216819
Repair Length (linear feet)	175
Area of repair (acres)	0.12
Area of laydown (acres)	0.50
Estimated excavation (cubic yards)	889
Earthfill (cubic yards)	0
Aggregate base (tons)	121
Agricultural soil (tons)	250
Rockfill (tons)	974
Launch Rock (tons)	1,246
Bedding material (cubic yards)	0
Truck Loads	638
Final bank slope (H:V)	2H:1V
OHWM (estimated elevation in feet)	6
Area of repair below OHWM (acres)	0.06
Area of repair above OHWM (acres)	0.06 (Entirely on waterside levee slope)

The reconstructed slope will conform to the pre-existing levee slope of the failure area. In-water work required to place clean rock to buttress the slope fill. The repair at Site 73 will include:

1. Enter the site from the levee road. The levee road is gated.
2. Identify trees and protect in place. No utilities were identified during the site visit.
3. Remove brush and fallen trees. Excavate and remove all soils disturbed by the erosion including unstable zones and loose material. In addition, excavate soils, loose materials and unstable rip rap in the transition zones adjacent to or within the failure.

4. Evaluate existing key way; if necessary and only where required, excavate a key way for the placement of launch rock at the toe of the failure extending into the waterway.

5. Shape slope for stability.

6. Place excavated material in interim lay down area for review by Native American Monitors.

7. Place geotextile on cleaned and shaped repair surface of levee in advance of placing rock.

8. Place clean launch rock beneath the water up to just 1 foot above water level, place geotextile and then place rip rap rock above the water level at the time of construction.

9. Place soil filled rock fill from 1 foot above water to top of repair.

10. Blend launch and rock fill protection at transition ends into the existing slopes of adjacent soils and/or rip rap and finish to grade.

11. Remove excavated soils from interim laydown area to contractor disposal area.

12. Hydroseed soil filled rock fill and disturbed laydown and staging areas.

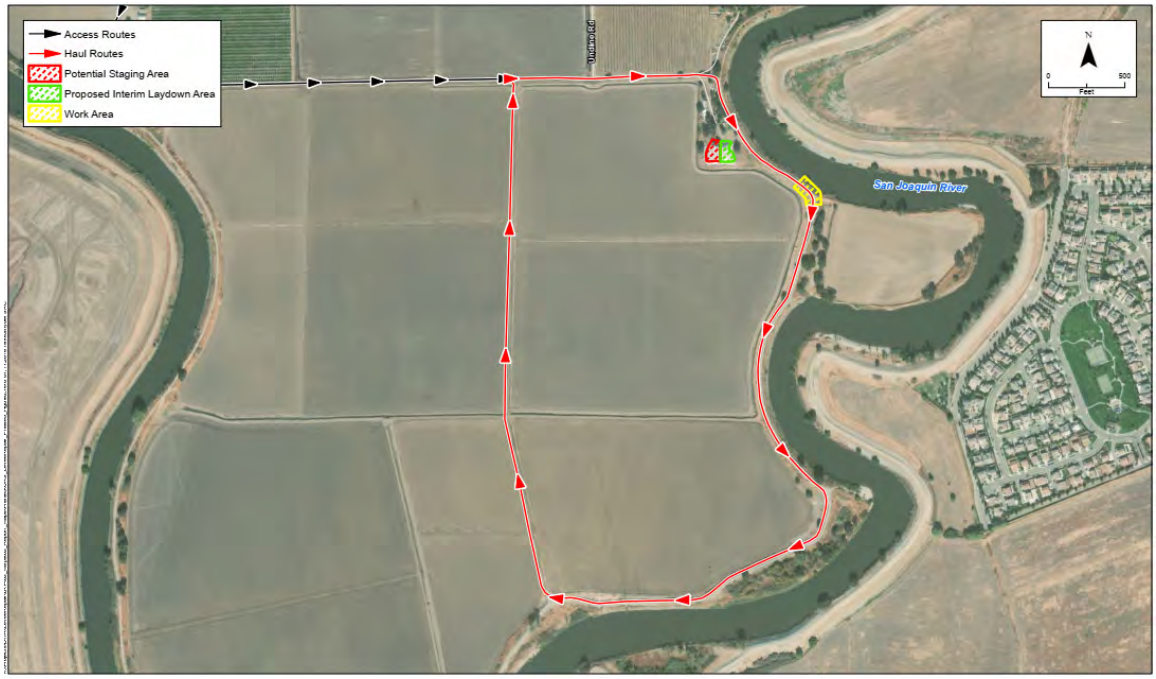
There are no power poles with associated powerlines that cross the levee or other utilities that exists at the waterside levee hinge.

Estimated staging, species/habitat, and historical impacts:

- Only one potential area northwest and approximately 670 feet from the site west of the levee appeared to have adequate space to be potential staging and laydown area. Access to the space is off the levee road from the site to an open farm field to the northwest; however, access to the land would require permission from the individual land owner.

- The water side of the narrow base of the levee exhibits characteristics of potential emergent and riparian jurisdictional wetlands (presence of hydrophytic vegetation, wetland hydrology, and hydric soils).

See **Figures A-26a** and **A-26b** for site location map and representative photographs, respectively.



2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-25a
Site 73, Old River – Site Location Map

Aerial view of erosion with rock repair armoring longitudinally along repair site.

View of southern end of erosion along waterside levee slope.

SOURCE: DWR 2017

2017 Storm Damage DWR Rehabilitation Program / 130028.39

Figure A-25b

Site 73, Old River – Representative Photographs

Site 74, Old River

General Characteristics	
Waterbody	Old River
Bank (view downstream)	Right (West)
County	San Joaquin
Local Maintaining Agency	RD544 – Upper Robert's Island
Levee Problem Characteristics	
Levee Problem	Waterside erosion, riprap displacement
Levee Miles (LM)	LM 3.82
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 37.829935437, -121.311876106 SE 37.8293323685, -121.311666388 SW 37.8292916541, -121.311962998 NW 37.8298585633, -121.312149948
Repair Length (linear feet)	250
Area of repair (acres)	0.23
Area of laydown (acres)	0.59
Estimated excavation (cubic yards)	1,312
Earthfill (cubic yards)	0
Aggregate base (tons)	94
Agricultural soil (tons)	648
Rockfill (tons)	2,522
Launch Rock (tons)	1,357
Bedding material (cubic yards)	0
Truck Loads	981
Final bank slope (H:V)	1.5H:1V
OHWM (estimated elevation in feet)	6
Area of repair below OHWM (acres)	0.08
Area of repair above OHWM (acres)	0.15 (Entirely on waterside levee slope)

The reconstructed slope will conform to the pre-existing levee slope of the failure area. In-water work required to place clean rock to buttress the slope fill.

The repair at site 74 will include:

1. Enter the site from the levee road. The levee road is gated.
2. Identify trees and protect in place.
3. Remove brush and fallen trees. Protect in place all elderberry shrubs. Protect in place to maximum extent practicable all native riparian trees, County Ordinance protected oaks and heritage trees.

4. Excavate and remove all soils disturbed by the erosion including unstable zones and loose material. In addition, excavate soils, loose materials and unstable rip rap in the transition zones adjacent to or within the failure.

5. Evaluate existing key way; if necessary and only where required, excavate a key way for the placement of launch rock at the toe of the failure extending into the waterway.

6. Shape backslope of levee for stability.

7. Place excavated material in interim lay down area for review by Native American Monitors.

8. Place geotextile on cleaned and shaped repair surface of levee in advance of placing rock.

9. Place clean launch rock beneath the water up to just 1 foot above water level, place geotextile and then place rip rap rock above the water level at the time of construction.

10. Place soil filled rock fill from 1 foot above water to top of repair.

11. Blend launch and rock fill protection at transition ends into the existing slopes of adjacent soils and/or rip rap and finish to grade.

12. Remove excavated soils from interim laydown area to contractor disposal area.

13. Hydroseed soil filled rock fill and disturbed laydown and staging areas.

There are no power poles with associated powerlines that cross the levee or other utilities that exists at the waterside levee hinge.

Estimated staging, species/habitat, and historical impacts:

- Only one potential area southwest and approximately 0.15 miles from the site west of the levee appeared to have adequate space to be potential staging and laydown area. Access to the space is off the levee road from the site to an open farm field to the southwest; however, access to the land would require permission from the individual land owner.

- The water side of the narrow base of the levee exhibits characteristics of potential emergent and riparian jurisdictional wetlands (presence of hydrophytic vegetation, wetland hydrology, and hydric soils).

- Several elderberry shrubs grow in the repair area.

See **Figures A-27a** and **A-27b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-26a
Site 74, Old River – Site Location Map

Aerial view of erosion with rock placement along waterside levee toe.

View of rip rap repair above erosion along waterside levee slope.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-26b

Site 74, Old River – Representative Photographs

Site 76, Elder Creek

General Characteristics	
Waterbody	Elder Creek
Bank (view downstream)	Right (North)
County	Tehama
Local Maintaining Agency	Tehama County Flood Control and Water Conservation District – NA19
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	LM 1.43
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 40.0521546959, -122.163102488 SE 40.0518761455, -122.162935461 SW 40.0514734147, -122.164070591 NW 40.0517515855, -122.164237563
Repair Length (linear feet)	370
Area of repair (acres)	0.27
Area of laydown (acres)	2.09
Estimated excavation (cubic yards)	1,747
Earthfill (cubic yards)	0
Aggregate base (tons)	164
Agricultural soil (tons)	957
Rockfill (tons)	3,721
Launch Rock (tons)	0
Bedding material (cubic yards)	0
Truck Loads	1,240
Final bank slope (H:V)	2.25H:1V
OHWM (estimated elevation in feet)	244
Area of repair below OHWM (acres)	0.12
Area of repair above OHWM (acres)	0.16 (Entirely on waterside levee slope)

Levee performance is affected by erosion along a 370-foot section of the waterside levee slope. The reconstructed slope will conform to the pre-existing levee slope of the failure area. The subject levee is under the maintenance responsibility of the local maintaining agency Tehama County. Access to the levee is impeded by a locked levee gate. To access this levee, a key from the local maintaining agency is required.

The repairs at Site 76 will include:

1. Enter the site from the levee road.

2. Remove brush, fallen trees, stumps, snags, dead and dying trees.

3. Excavate and remove all loose and disturbed material/soils and any potential unstable zones.

4. Shape backslope of levee for stability.

5. Place excavated material in interim lay down area for review by Native American Monitors.

6. Place geotextile on cleaned and shaped repair surface of levee in advance of placing rock.

7. Place clean launch rock beneath the water up to just 1 foot above water level, place geotextile and then place rip rap rock above the water level at the time of construction.

8. Place soil filled rock fill from 1 foot above water to top of repair.

9. Blend launch and rock fill protection at transition ends into the existing slopes of adjacent soils and/or rip rap and finish to grade.

10. Remove excavated soils from interim laydown area to contractor disposal area.

12. Hydroseed soil filled rock fill and disturbed laydown and staging areas. The land side slope contains overhead utilities at the toe road.

There are no power poles with associated powerlines that cross the levee or other utilities that exists at the waterside levee hinge.

Estimated staging, species/habitat, and historical impacts:

- Two proposed areas have been identified as potential staging and interim laydown areas. Both locations have good access and ample room for staging/laydown activities. Staging areas are on private property and will require permission from the land owner.

- The water side of the narrow base of the levee downstream of the past rock slope protection repair area exhibits characteristics of potential emergent and riparian jurisdictional wetlands (presence of hydrophytic vegetation, wetland hydrology, and hydric soils).

See **Figures A-28a** and **A-28b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-27a
Site 76, Elder Creek – Site Location Map

Aerial imagery of erosion and emergency rock repair at the damaged site.

Bank erosion and emergency rock repair at the waterside toe of damaged site.

SOURCE: DWR 2017

2017 Storm Damage DWR Rehabilitation Program / 130028.39

Figure A-27b

Site 76, Elder Creek – Representative Photographs

Site 77, Georgiana Slough

General Characteristics	
Waterbody	Georgiana Slough
Bank (view downstream)	Left (East)
County	Sacramento
Local Maintaining Agency	RD563 – Tyler Island
Levee Problem Characteristics	
Levee Problem	Waterside erosion, riprap failing
Levee Miles (LM)	LM 9.73
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	NE 38.1508540483, -121.59391461 SE 38.1507219401, -121.594022966 SW 38.1508505572, -121.594324642 NW 38.1509989299, -121.594241375
Repair Length (linear feet)	120
Area of repair (acres)	0.04
Area of laydown (acres)	1.28
Estimated excavation (cubic yards)	240
Earthfill (cubic yards)	0
Aggregate base (tons)	47
Agricultural soil (tons)	65
Rockfill (tons)	253
Launch Rock (tons)	190
Bedding material (cubic yards)	0
Truck Loads	165
Final bank slope (H:V)	3H:1V
OHWM (estimated elevation in feet)	6
Area of repair below OHWM (acres)	0.01
Area of repair above OHWM (acres)	0.03 (Entirely on waterside levee slope)

The reconstructed slope will conform to the pre-existing levee slope of the failure area. In-water work required to place clean rock to buttress the slope fill.

The repair at Site 77 will include:

1. Enter the site from the levee road (off Tyler Island Road). The levee road is gated.
2. Identify utilities and protect in place. No utilities were identified during the site visit.
3. Remove vegetation.

4. Excavate and remove all soils disturbed by the erosion including unstable zones and loose material. In addition, excavate soils, loose materials and unstable rip rap in the transition zones adjacent to or within the failure.

5. Evaluate existing key way; if necessary and only where required, excavate a key way for the placement of launch rock at the toe of the failure extending into the waterway.

6. Shape back slope of levee for slope stability.

7. Place excavated material in interim lay down area for review by Native American Monitors.

8. Place geotextile on cleaned and shaped repair surface of levee in advance of placing rock.

9. Place clean launch rock beneath the water up to just 1 foot above water level, place geotextile and then soil filled rock fill above the water level at the time of construction.

10. Place soil filled rock fill from 1 foot above water to top of repair.

11. Blend launch and soil filled rock fill protection at transition ends into the existing slopes of adjacent soils and/or rip rap and finish to grade.

12. Remove excavated soils from interim laydown area to contractor disposal area.

13. Hydroseed soil filled rock fill and disturbed laydown and staging areas.

There are no power poles with associated powerlines that cross the levee or other utilities that exists at the waterside levee hinge. The site is across from the Ox-bow Marina.

Estimated staging, species/habitat, and historical impacts:

- One potential area south and adjacent to the landside of the levee appears to have adequate space to be potential staging and laydown area. Access to the space is off the levee road from the site to an open farm field; however, access to the land would require permission from the individual land owner.

- The water side of the narrow base of the levee exhibits characteristics of potential emergent and riparian jurisdictional wetlands (presence of hydrophytic vegetation, wetland hydrology, and hydric soils.

See **Figures A-29a** and **A-29b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-28a
Site 77, Georgiana Slough – Site Location Map

View of erosion along waterside levee slope.

View of erosion and animal burrows along levee slope.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-28b

Site 77, Georgiana Slough – Representative Photographs

Site 79, Butte Creek

General Characteristics	
Waterbody	Butte Creek
Bank (view downstream)	Left (East)
County	Butte
Local Maintaining Agency	State Maintained Area 5 – Sutter Maintenance Yard
Levee Problem Characteristics	
Levee Problem	Waterside erosion
Levee Miles (LM)	LM 1.6
Repair Characteristics	
Repair Type	Erosion
Work Limits (northing/easting)	Start Lat/Long: 39.676298, -121.778272 End Lat/Long: 39.675818, -121.77863
Repair Length (linear feet)	400
Area of repair (acres)	0.2
Area of laydown (acres)	0.50
Estimated excavation (cubic yards)	2,444
Earthfill (cubic yards)	0
Aggregate base (tons)	309
Agricultural soil (tons)	114
Rockfill (tons)	4,355
Launch Rock (tons)	4,355
Bedding material (cubic yards)	0
Truck Loads	1,635
Final bank slope (H:V)	1.7H:1V
OHWM (estimated elevation in feet)	185
Area of repair below OHWM (acres)	0.07
Area of repair above OHWM (acres)	0.13 (Entirely on waterside levee slope)

The reconstruction of the levee slope will conform to the pre-existing levee slope of the failure area. In-water work required to place clean rock and buttress the slope fill.

The repair at Butte Creek Site 79 will include:

1. Enter the site from the levee road. The subject levee is impeded by a locked levee gate.
2. Identify trees and protect in place.
3. Remove brush, fallen trees, stumps, snags, dead and dying trees.
4. Excavate and remove all loose and disturbed material/soils and any potential unstable zones.

5. Excavate and remove all soils disturbed by the erosion including unstable zones and loose material. In addition, excavate soils, loose materials and unstable rip rap in the transition zones adjacent to or within the failure.

6. Shape backslope of levee for stability.

7. Place excavated material in interim lay down area for review by Native American Monitors.

8. Place geotextile on cleaned and shaped repair surface of levee in advance of placing rock.

9. Place clean launch rock beneath the water up to just 1 foot above water level, place geotextile and then place rip rap rock above the water level at the time of construction.

10. Place soil filled rock fill from 1 foot above water to top of repair.

11. Blend launch and rock fill protection at transition ends into the existing slopes of adjacent soils and/or rip rap and finish to grade.

There are power poles that may have associated powerlines that cross the levee on the downstream edge of the repair segment. No utilities were identified at the waterside levee hinge although private properties are located on the landside of the levee segment.

Estimated staging, species/habitat, and historical impacts:

- Proposed areas have been identified as potential staging and interim laydown areas. The locations have good access and ample room for staging/laydown activities.

- The water side of the narrow base of the levee exhibits characteristics of potential emergent and riparian jurisdictional wetlands (presence of hydrophytic vegetation, wetland hydrology, and hydric soils.

See **Figures A-30a** and **A-30b** for site location map and representative photographs, respectively.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-29a
Site 79, Butte Creek – Site Location Map

Bank erosion at damaged site.

View looking upstream of erosion along southern levee slope.

2017 Storm Damage DWR Rehabilitation Program / 130028.39

SOURCE: DWR 2017

Figure A-29b
Site 79, Butte Creek – Representative Photographs

Appendix B
Air Quality Modeling

Air Quality and GHG Appendix:

1. CalEEMod output with input assumptions for each repair site proposed under the for truck hauling scenario. Maximum daily output and annual output.
2. CalEEMod output with input assumptions for each repair site proposed under the for barge hauling scenario. Maximum daily output and annual output.
3. Calculations of Marine Emissions for each repair site proposed under the for barge hauling scenario.
4. SMAQMD Harborcraft Emission Factor Output.

1. CalEEMod output with input assumptions for each repair site proposed under the for truck hauling scenario. Maximum daily output and annual output.

SDDER_Levee42

Yolo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	54
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

SDDER_Levee42 - Yolo County, Summer

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	7.88
tblGrading	MaterialExported	0.00	1,923.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	40.00
tblTripsAndVMT	HaulingTripNumber	240.00	2,198.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	4.0382	73.9633	25.0207	0.1920	12.5281	1.5331	14.0612	5.6409	1.4205	7.0614	0.0000	19,945.8010	19,945.8010	1.2004	0.0000	19,975.8119
Maximum	**4.0382**	**73.9633**	**25.0207**	**0.1920**	**12.5281**	**1.5331**	**14.0612**	**5.6409**	**1.4205**	**7.0614**	**0.0000**	**19,945.8010**	**19,945.8010**	**1.2004**	**0.0000**	**19,975.8119**

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					
2019	1.9814	51.3909	25.3129	0.1920	12.5281	0.2892	12.8173	5.6409	0.2785	5.9194	0.0000	19,945.8010	19,945.8010	1.2004	0.0000	19,975.8119
Maximum	**1.9814**	**51.3909**	**25.3129**	**0.1920**	**12.5281**	**0.2892**	**12.8173**	**5.6409**	**0.2785**	**5.9194**	**0.0000**	**19,945.8010**	**19,945.8010**	**1.2004**	**0.0000**	**19,975.8119**

SDDER_Levee42 - Yolo County, Summer

	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	**50.93**	**30.52**	**-1.17**	**0.00**	**0.00**	**81.13**	**8.85**	**0.00**	**80.39**	**16.17**	**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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978
Total	**0.0623**	**0.3266**	**0.6142**	**2.0100e-003**	**7.9227**	**2.7700e-003**	**7.9255**	**0.8111**	**2.6200e-003**	**0.8137**		**203.7569**	**203.7569**	**9.6500e-003**	**0.0000**	**203.9980**

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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978
Total	**0.0623**	**0.3266**	**0.6142**	**2.0100e-003**	**7.9227**	**2.7700e-003**	**7.9255**	**0.8111**	**2.6200e-003**	**0.8137**		**203.7569**	**203.7569**	**9.6500e-003**	**0.0000**	**203.9980**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 7.88

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	2,198.00	15.00	9.00	40.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					8.7232	0.0000	8.7232	4.6013	0.0000	4.6013			0.0000			0.0000
Off-Road	2.4101	25.3983	15.7446	0.0266		1.2863	1.2863		1.1845	1.1845		2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**2.4101**	**25.3983**	**15.7446**	**0.0266**	**8.7232**	**1.2863**	**10.0095**	**4.6013**	**1.1845**	**5.7858**		**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	1.5428	48.3823	8.6241	0.1634	3.6369	0.2449	3.8818	0.9948	0.2343	1.2291		17,125.0246	17,125.0246	0.3764		17,134.4346
Vendor	4.5100e-003	0.1344	0.0253	3.4000e-004	8.3200e-003	8.8000e-004	9.2000e-003	2.3900e-003	8.5000e-004	3.2400e-003		35.5796	35.5796	1.5500e-003		35.6183
Worker	0.0807	0.0483	0.6268	1.6900e-003	0.1597	1.0000e-003	0.1607	0.0424	9.3000e-004	0.0433		168.3134	168.3134	4.6100e-003		168.4286
Total	**1.6280**	**48.5650**	**9.2762**	**0.1654**	**3.8049**	**0.2468**	**4.0517**	**1.0395**	**0.2361**	**1.2756**		**17,328.9175**	**17,328.9175**	**0.3826**		**17,338.4815**

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					8.7232	0.0000	8.7232	4.6013	0.0000	4.6013			0.0000			0.0000
Off-Road	0.3533	2.8259	16.0368	0.0266		0.0424	0.0424		0.0424	0.0424	0.0000	2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**0.3533**	**2.8259**	**16.0368**	**0.0266**	**8.7232**	**0.0424**	**8.7657**	**4.6013**	**0.0424**	**4.6438**	**0.0000**	**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	1.5428	48.3823	8.6241	0.1634	3.6369	0.2449	3.8818	0.9948	0.2343	1.2291		17,125.0246	17,125.0246	0.3764		17,134.4346
Vendor	4.5100e-003	0.1344	0.0253	3.4000e-004	8.3200e-003	8.8000e-004	9.2000e-003	2.3900e-003	8.5000e-004	3.2400e-003		35.5796	35.5796	1.5500e-003		35.6183
Worker	0.0807	0.0483	0.6268	1.6900e-003	0.1597	1.0000e-003	0.1607	0.0424	9.3000e-004	0.0433		168.3134	168.3134	4.6100e-003		168.4286
Total	**1.6280**	**48.5650**	**9.2762**	**0.1654**	**3.8049**	**0.2468**	**4.0517**	**1.0395**	**0.2361**	**1.2756**		**17,328.9175**	**17,328.9175**	**0.3826**		**17,338.4815**

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	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978
Unmitigated	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	19,522	19,522
Total	1.89	22.75	16.74	19,522	19,522

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.483219	0.043744	0.205783	0.131644	0.029079	0.006112	0.051218	0.038349	0.001001	0.001999	0.006123	0.000788	0.000940

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
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**

5.2 Energy by Land Use - NaturalGas

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
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

	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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

SDDER_Levee42

Yolo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	54
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

SDDER_Levee42 - Yolo County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	7.88
tblGrading	MaterialExported	0.00	1,923.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	40.00
tblTripsAndVMT	HaulingTripNumber	240.00	2,198.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	0.0424	0.7996	0.2637	2.0100e-003	0.1304	0.0161	0.1465	0.0590	0.0149	0.0739	0.0000	189.1832	189.1832	0.0116	0.0000	189.4725
Maximum	**0.0424**	**0.7996**	**0.2637**	**2.0100e-003**	**0.1304**	**0.0161**	**0.1465**	**0.0590**	**0.0149**	**0.0739**	**0.0000**	**189.1832**	**189.1832**	**0.0116**	**0.0000**	**189.4725**

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					
2019	0.0208	0.5626	0.2668	2.0100e-003	0.1304	3.0500e-003	0.1335	0.0590	2.9400e-003	0.0619	0.0000	189.1832	189.1832	0.0116	0.0000	189.4725
Maximum	**0.0208**	**0.5626**	**0.2668**	**2.0100e-003**	**0.1304**	**3.0500e-003**	**0.1335**	**0.0590**	**2.9400e-003**	**0.0619**	**0.0000**	**189.1832**	**189.1832**	**0.0116**	**0.0000**	**189.4725**

	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	**50.88**	**29.64**	**-1.16**	**0.00**	**0.00**	**81.07**	**8.91**	**0.00**	**80.31**	**16.23**	**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	**7-15-2019**	**9-30-2019**	0.8079	0.5528
		Highest	0.8079	0.5528

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.1900e-003**	**0.0190**	**0.0312**	**1.1000e-004**	**0.4429**	**1.6000e-004**	**0.4431**	**0.0453**	**1.5000e-004**	**0.0455**	**0.0183**	**10.9023**	**10.9205**	**1.6100e-003**	**1.0000e-005**	**10.9643**

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.1900e-003**	**0.0190**	**0.0312**	**1.1000e-004**	**0.4429**	**1.6000e-004**	**0.4431**	**0.0453**	**1.5000e-004**	**0.0455**	**0.0183**	**10.9023**	**10.9205**	**1.6100e-003**	**1.0000e-005**	**10.9643**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 7.88

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	2,198.00	15.00	9.00	40.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					0.0916	0.0000	0.0916	0.0483	0.0000	0.0483	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2667	0.1653	2.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	24.9270	24.9270	7.7900e-003	0.0000	25.1217
Total	**0.0253**	**0.2667**	**0.1653**	**2.8000e-004**	**0.0916**	**0.0135**	**0.1051**	**0.0483**	**0.0124**	**0.0608**	**0.0000**	**24.9270**	**24.9270**	**7.7900e-003**	**0.0000**	**25.1217**

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	0.0163	0.5310	0.0925	1.7100e-003	0.0371	2.5900e-003	0.0397	0.0102	2.4700e-003	0.0127	0.0000	162.4662	162.4662	3.7300e-003	0.0000	162.5593
Vendor	5.0000e-005	1.4500e-003	2.8000e-004	0.0000	9.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3356	0.3356	2.0000e-005	0.0000	0.3360
Worker	7.6000e-004	5.6000e-004	5.5700e-003	2.0000e-005	1.6200e-003	1.0000e-005	1.6300e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4545	1.4545	4.0000e-005	0.0000	1.4554
Total	**0.0171**	**0.5330**	**0.0984**	**1.7300e-003**	**0.0388**	**2.6100e-003**	**0.0414**	**0.0106**	**2.4900e-003**	**0.0131**	**0.0000**	**164.2563**	**164.2563**	**3.7900e-003**	**0.0000**	**164.3508**

3.2 Grading - 2019

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					0.0916	0.0000	0.0916	0.0483	0.0000	0.0483	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0297	0.1684	2.8000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.9269	24.9269	7.7900e-003	0.0000	25.1217
Total	**3.7100e-003**	**0.0297**	**0.1684**	**2.8000e-004**	**0.0916**	**4.5000e-004**	**0.0920**	**0.0483**	**4.5000e-004**	**0.0488**	**0.0000**	**24.9269**	**24.9269**	**7.7900e-003**	**0.0000**	**25.1217**

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	0.0163	0.5310	0.0925	1.7100e-003	0.0371	2.5900e-003	0.0397	0.0102	2.4700e-003	0.0127	0.0000	162.4662	162.4662	3.7300e-003	0.0000	162.5593
Vendor	5.0000e-005	1.4500e-003	2.8000e-004	0.0000	9.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3356	0.3356	2.0000e-005	0.0000	0.3360
Worker	7.6000e-004	5.6000e-004	5.5700e-003	2.0000e-005	1.6200e-003	1.0000e-005	1.6300e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4545	1.4545	4.0000e-005	0.0000	1.4554
Total	**0.0171**	**0.5330**	**0.0984**	**1.7300e-003**	**0.0388**	**2.6100e-003**	**0.0414**	**0.0106**	**2.4900e-003**	**0.0131**	**0.0000**	**164.2563**	**164.2563**	**3.7900e-003**	**0.0000**	**164.3508**

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	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012
Unmitigated	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	19,522	19,522
Total	1.89	22.75	16.74	19,522	19,522

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.483219	0.043744	0.205783	0.131644	0.029079	0.006112	0.051218	0.038349	0.001001	0.001999	0.006123	0.000788	0.000940

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2132	5.0000e-005	1.0000e-005	1.2179
Unmitigated	1.2132	5.0000e-005	1.0000e-005	1.2179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

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

SDDER_Levee43

Glenn County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	61
Climate Zone	3			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 months

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - access roads are all paved

Grading -

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Road Dust -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Parking	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	90.00
tblGrading	MaterialExported	0.00	35,171.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	HaulingTripNumber	4,396.00	40,195.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	8.2060	200.9037	45.5832	0.5497	20.2445	2.2908	22.5354	7.8257	2.1455	9.9712	0.0000	57,413.5917	57,413.5917	2.5738	0.0000	57,477.9369
Maximum	**8.2060**	**200.9037**	**45.5832**	**0.5497**	**20.2445**	**2.2908**	**22.5354**	**7.8257**	**2.1455**	**9.9712**	**0.0000**	**57,413.5917**	**57,413.5917**	**2.5738**	**0.0000**	**57,477.9369**

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					
2019	6.1492	178.3313	45.8753	0.5497	20.2445	1.0470	21.2915	7.8257	1.0035	8.8292	0.0000	57,413.5917	57,413.5917	2.5738	0.0000	57,477.9369
Maximum	**6.1492**	**178.3313**	**45.8753**	**0.5497**	**20.2445**	**1.0470**	**21.2915**	**7.8257**	**1.0035**	**8.8292**	**0.0000**	**57,413.5917**	**57,413.5917**	**2.5738**	**0.0000**	**57,477.9369**

	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	**25.06**	**11.24**	**-0.64**	**0.00**	**0.00**	**54.30**	**5.52**	**0.00**	**53.23**	**11.45**	**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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0723	0.3977	0.6759	1.9500e-003	0.1198	2.6300e-003	0.1225	0.0321	2.4900e-003	0.0346		197.9105	197.9105	0.0115		198.1989
Total	**0.0746**	**0.3977**	**0.6760**	**1.9500e-003**	**0.1198**	**2.6300e-003**	**0.1225**	**0.0321**	**2.4900e-003**	**0.0346**		**197.9107**	**197.9107**	**0.0115**	**0.0000**	**198.1992**

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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0723	0.3977	0.6759	1.9500e-003	0.1198	2.6300e-003	0.1225	0.0321	2.4900e-003	0.0346		197.9105	197.9105	0.0115		198.1989
Total	**0.0746**	**0.3977**	**0.6760**	**1.9500e-003**	**0.1198**	**2.6300e-003**	**0.1225**	**0.0321**	**2.4900e-003**	**0.0346**		**197.9107**	**197.9107**	**0.0115**	**0.0000**	**198.1992**

	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	Grading	Grading	7/15/2019	11/15/2019	5	90	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	40,195.00	16.80	6.60	30.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					8.3246	0.0000	8.3246	4.5583	0.0000	4.5583			0.0000			0.0000
Off-Road	2.4101	25.3983	15.7446	0.0266		1.2863	1.2863		1.1845	1.1845		2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**2.4101**	**25.3983**	**15.7446**	**0.0266**	**8.3246**	**1.2863**	**9.6109**	**4.5583**	**1.1845**	**5.7427**		**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	5.6815	175.3032	28.8722	0.5208	11.7350	1.0022	12.7372	3.2183	0.9589	4.1771		54,573.1907	54,573.1907	1.7455		54,616.8287
Vendor	6.2600e-003	0.1263	0.0405	2.8000e-004	6.1300e-003	9.8000e-004	7.1100e-003	1.7700e-003	9.4000e-004	2.7100e-003		28.9957	28.9957	2.0900e-003		29.0479
Worker	0.1081	0.0760	0.9259	1.9600e-003	0.1788	1.3300e-003	0.1802	0.0474	1.2200e-003	0.0486		194.5218	194.5218	8.3300e-003		194.7300
Total	**5.7959**	**175.5054**	**29.8386**	**0.5231**	**11.9200**	**1.0045**	**12.9245**	**3.2675**	**0.9610**	**4.2285**		**54,796.7082**	**54,796.7082**	**1.7559**		**54,840.6065**

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					8.3246	0.0000	8.3246	4.5583	0.0000	4.5583			0.0000			0.0000
Off-Road	0.3533	2.8259	16.0368	0.0266		0.0424	0.0424		0.0424	0.0424	0.0000	2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**0.3533**	**2.8259**	**16.0368**	**0.0266**	**8.3246**	**0.0424**	**8.3670**	**4.5583**	**0.0424**	**4.6007**	**0.0000**	**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	5.6815	175.3032	28.8722	0.5208	11.7350	1.0022	12.7372	3.2183	0.9589	4.1771		54,573.1907	54,573.1907	1.7455		54,616.8287
Vendor	6.2600e-003	0.1263	0.0405	2.8000e-004	6.1300e-003	9.8000e-004	7.1100e-003	1.7700e-003	9.4000e-004	2.7100e-003		28.9957	28.9957	2.0900e-003		29.0479
Worker	0.1081	0.0760	0.9259	1.9600e-003	0.1788	1.3300e-003	0.1802	0.0474	1.2200e-003	0.0486		194.5218	194.5218	8.3300e-003		194.7300
Total	**5.7959**	**175.5054**	**29.8386**	**0.5231**	**11.9200**	**1.0045**	**12.9245**	**3.2675**	**0.9610**	**4.2285**		**54,796.7082**	**54,796.7082**	**1.7559**		**54,840.6065**

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	0.0723	0.3977	0.6759	1.9500e-003	0.1198	2.6300e-003	0.1225	0.0321	2.4900e-003	0.0346		197.9105	197.9105	0.0115		198.1989
Unmitigated	0.0723	0.3977	0.6759	1.9500e-003	0.1198	2.6300e-003	0.1225	0.0321	2.4900e-003	0.0346		197.9105	197.9105	0.0115		198.1989

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.527625	0.034128	0.170517	0.133884	0.037488	0.008360	0.010441	0.067935	0.001069	0.001802	0.004932	0.000833	0.000986

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
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**

5.2 Energy by Land Use - NaturalGas

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
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

	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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

SDDER_Levee43

Glenn County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	61
Climate Zone	3			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 months

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - access roads are all paved

Grading -

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Road Dust -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Parking	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	90.00
tblGrading	MaterialExported	0.00	35,171.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	HaulingTripNumber	4,396.00	40,195.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	0.3716	9.3485	2.0952	0.0246	0.8941	0.1035	0.9975	0.3480	0.0969	0.4449	0.0000	2,327.5497	2,327.5497	0.1086	0.0000	2,330.2640
Maximum	**0.3716**	**9.3485**	**2.0952**	**0.0246**	**0.8941**	**0.1035**	**0.9975**	**0.3480**	**0.0969**	**0.4449**	**0.0000**	**2,327.5497**	**2,327.5497**	**0.1086**	**0.0000**	**2,330.2640**

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					
2019	0.2791	8.3327	2.1084	0.0246	0.8941	0.0475	0.9415	0.3480	0.0455	0.3935	0.0000	2,327.5495	2,327.5495	0.1086	0.0000	2,330.2639
Maximum	**0.2791**	**8.3327**	**2.1084**	**0.0246**	**0.8941**	**0.0475**	**0.9415**	**0.3480**	**0.0455**	**0.3935**	**0.0000**	**2,327.5495**	**2,327.5495**	**0.1086**	**0.0000**	**2,330.2639**

	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	**24.91**	**10.87**	**-0.63**	**0.00**	**0.00**	**54.11**	**5.61**	**0.00**	**53.04**	**11.55**	**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	**7-15-2019**	**9-30-2019**	5.8252	5.1391
		Highest	5.8252	5.1391

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	3.3400e-003	0.0229	0.0347	1.0000e-004	6.4600e-003	1.5000e-004	6.6100e-003	1.7400e-003	1.4000e-004	1.8800e-003	0.0000	9.4046	9.4046	5.8000e-004	0.0000	9.4191
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.7500e-003**	**0.0229**	**0.0347**	**1.0000e-004**	**6.4600e-003**	**1.5000e-004**	**6.6100e-003**	**1.7400e-003**	**1.4000e-004**	**1.8800e-003**	**0.0183**	**10.6178**	**10.6361**	**1.7100e-003**	**1.0000e-005**	**10.6823**

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	3.3400e-003	0.0229	0.0347	1.0000e-004	6.4600e-003	1.5000e-004	6.6100e-003	1.7400e-003	1.4000e-004	1.8800e-003	0.0000	9.4046	9.4046	5.8000e-004	0.0000	9.4191
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.7500e-003**	**0.0229**	**0.0347**	**1.0000e-004**	**6.4600e-003**	**1.5000e-004**	**6.6100e-003**	**1.7400e-003**	**1.4000e-004**	**1.8800e-003**	**0.0183**	**10.6178**	**10.6361**	**1.7100e-003**	**1.0000e-005**	**10.6823**

	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	Grading	Grading	7/15/2019	11/15/2019	5	90	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	40,195.00	16.80	6.60	30.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					0.3746	0.0000	0.3746	0.2051	0.0000	0.2051	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1085	1.1429	0.7085	1.2000e-003		0.0579	0.0579		0.0533	0.0533	0.0000	106.8299	106.8299	0.0334	0.0000	107.6646
Total	**0.1085**	**1.1429**	**0.7085**	**1.2000e-003**	**0.3746**	**0.0579**	**0.4325**	**0.2051**	**0.0533**	**0.2584**	**0.0000**	**106.8299**	**106.8299**	**0.0334**	**0.0000**	**107.6646**

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	0.2585	8.1959	1.3495	0.0233	0.5114	0.0455	0.5569	0.1407	0.0435	0.1842	0.0000	2,212.3624	2,212.3624	0.0748	0.0000	2,214.2323
Vendor	2.8000e-004	5.8100e-003	1.9300e-003	1.0000e-005	2.7000e-004	4.0000e-005	3.1000e-004	8.0000e-005	4.0000e-005	1.2000e-004	0.0000	1.1660	1.1660	9.0000e-005	0.0000	1.1682
Worker	4.3700e-003	3.7900e-003	0.0353	8.0000e-005	7.7500e-003	6.0000e-005	7.8100e-003	2.0600e-003	6.0000e-005	2.1200e-003	0.0000	7.1914	7.1914	3.0000e-004	0.0000	7.1989
Total	**0.2632**	**8.2055**	**1.3867**	**0.0234**	**0.5194**	**0.0456**	**0.5650**	**0.1429**	**0.0436**	**0.1865**	**0.0000**	**2,220.7198**	**2,220.7198**	**0.0752**	**0.0000**	**2,222.5994**

3.2 Grading - 2019

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					0.3746	0.0000	0.3746	0.2051	0.0000	0.2051	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.1272	0.7217	1.2000e-003		1.9100e-003	1.9100e-003		1.9100e-003	1.9100e-003	0.0000	106.8297	106.8297	0.0334	0.0000	107.6644
Total	**0.0159**	**0.1272**	**0.7217**	**1.2000e-003**	**0.3746**	**1.9100e-003**	**0.3765**	**0.2051**	**1.9100e-003**	**0.2070**	**0.0000**	**106.8297**	**106.8297**	**0.0334**	**0.0000**	**107.6644**

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	0.2585	8.1959	1.3495	0.0233	0.5114	0.0455	0.5569	0.1407	0.0435	0.1842	0.0000	2,212.3624	2,212.3624	0.0748	0.0000	2,214.2323
Vendor	2.8000e-004	5.8100e-003	1.9300e-003	1.0000e-005	2.7000e-004	4.0000e-005	3.1000e-004	8.0000e-005	4.0000e-005	1.2000e-004	0.0000	1.1660	1.1660	9.0000e-005	0.0000	1.1682
Worker	4.3700e-003	3.7900e-003	0.0353	8.0000e-005	7.7500e-003	6.0000e-005	7.8100e-003	2.0600e-003	6.0000e-005	2.1200e-003	0.0000	7.1914	7.1914	3.0000e-004	0.0000	7.1989
Total	**0.2632**	**8.2055**	**1.3867**	**0.0234**	**0.5194**	**0.0456**	**0.5650**	**0.1429**	**0.0436**	**0.1865**	**0.0000**	**2,220.7198**	**2,220.7198**	**0.0752**	**0.0000**	**2,222.5994**

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	3.3400e-003	0.0229	0.0347	1.0000e-004	6.4600e-003	1.5000e-004	6.6100e-003	1.7400e-003	1.4000e-004	1.8800e-003	0.0000	9.4046	9.4046	5.8000e-004	0.0000	9.4191
Unmitigated	3.3400e-003	0.0229	0.0347	1.0000e-004	6.4600e-003	1.5000e-004	6.6100e-003	1.7400e-003	1.4000e-004	1.8800e-003	0.0000	9.4046	9.4046	5.8000e-004	0.0000	9.4191

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.527625	0.034128	0.170517	0.133884	0.037488	0.008360	0.010441	0.067935	0.001069	0.001802	0.004932	0.000833	0.000986

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2132	5.0000e-005	1.0000e-005	1.2179
Unmitigated	1.2132	5.0000e-005	1.0000e-005	1.2179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

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

SDDER_Levee43

Glenn County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	61
Climate Zone	3			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - access roads are all paved

Grading -

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Road Dust -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Parking	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	35,171.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	HaulingTripNumber	4,396.00	40,195.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	26.8738	776.8998	140.4490	2.2610	86.1546	5.5838	91.7384	33.3772	5.2960	38.6732	0.0000	236,725.5040	236,725.5040	8.3091	0.0000	236,933.2310
Maximum	**26.8738**	**776.8998**	**140.4490**	**2.2610**	**86.1546**	**5.5838**	**91.7384**	**33.3772**	**5.2960**	**38.6732**	**0.0000**	**236,725.5040**	**236,725.5040**	**8.3091**	**0.0000**	**236,933.2310**

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					
2019	24.8171	754.3274	140.7412	2.2610	86.1546	4.3400	90.4946	33.3772	4.1540	37.5312	0.0000	236,725.5040	236,725.5040	8.3091	0.0000	236,933.2310
Maximum	**24.8171**	**754.3274**	**140.7412**	**2.2610**	**86.1546**	**4.3400**	**90.4946**	**33.3772**	**4.1540**	**37.5312**	**0.0000**	**236,725.5040**	**236,725.5040**	**8.3091**	**0.0000**	**236,933.2310**

	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	**7.65**	**2.91**	**-0.21**	**0.00**	**0.00**	**22.28**	**1.36**	**0.00**	**21.56**	**2.95**	**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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0723	0.3977	0.6759	1.9500e-003	0.1198	2.6300e-003	0.1225	0.0321	2.4900e-003	0.0346		197.9105	197.9105	0.0115		198.1989
Total	**0.0746**	**0.3977**	**0.6760**	**1.9500e-003**	**0.1198**	**2.6300e-003**	**0.1225**	**0.0321**	**2.4900e-003**	**0.0346**		**197.9107**	**197.9107**	**0.0115**	**0.0000**	**198.1992**

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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0723	0.3977	0.6759	1.9500e-003	0.1198	2.6300e-003	0.1225	0.0321	2.4900e-003	0.0346		197.9105	197.9105	0.0115		198.1989
Total	**0.0746**	**0.3977**	**0.6760**	**1.9500e-003**	**0.1198**	**2.6300e-003**	**0.1225**	**0.0321**	**2.4900e-003**	**0.0346**		**197.9107**	**197.9107**	**0.0115**	**0.0000**	**198.1992**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	40,195.00	16.80	6.60	30.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					35.6767	0.0000	35.6767	19.5354	0.0000	19.5354			0.0000			0.0000
Off-Road	2.4101	25.3983	15.7446	0.0266		1.2863	1.2863		1.1845	1.1845		2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**2.4101**	**25.3983**	**15.7446**	**0.0266**	**35.6767**	**1.2863**	**36.9630**	**19.5354**	**1.1845**	**20.7199**		**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	24.3494	751.2993	123.7381	2.2322	50.2929	4.2952	54.5882	13.7926	4.1094	17.9020		233,885.1031	233,885.1031	7.4808		234,072.1228
Vendor	6.2600e-003	0.1263	0.0405	2.8000e-004	6.1300e-003	9.8000e-004	7.1100e-003	1.7700e-003	9.4000e-004	2.7100e-003		28.9957	28.9957	2.0900e-003		29.0479
Worker	0.1081	0.0760	0.9259	1.9600e-003	0.1788	1.3300e-003	0.1802	0.0474	1.2200e-003	0.0486		194.5218	194.5218	8.3300e-003		194.7300
Total	**24.4637**	**751.5015**	**124.7044**	**2.2344**	**50.4779**	**4.2975**	**54.7754**	**13.8418**	**4.1115**	**17.9533**		**234,108.6205**	**234,108.6205**	**7.4912**		**234,295.9006**

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					35.6767	0.0000	35.6767	19.5354	0.0000	19.5354			0.0000			0.0000
Off-Road	0.3533	2.8259	16.0368	0.0266		0.0424	0.0424		0.0424	0.0424	0.0000	2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**0.3533**	**2.8259**	**16.0368**	**0.0266**	**35.6767**	**0.0424**	**35.7191**	**19.5354**	**0.0424**	**19.5778**	**0.0000**	**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	24.3494	751.2993	123.7381	2.2322	50.2929	4.2952	54.5882	13.7926	4.1094	17.9020		233,885.1031	233,885.1031	7.4808		234,072.1228
Vendor	6.2600e-003	0.1263	0.0405	2.8000e-004	6.1300e-003	9.8000e-004	7.1100e-003	1.7700e-003	9.4000e-004	2.7100e-003		28.9957	28.9957	2.0900e-003		29.0479
Worker	0.1081	0.0760	0.9259	1.9600e-003	0.1788	1.3300e-003	0.1802	0.0474	1.2200e-003	0.0486		194.5218	194.5218	8.3300e-003		194.7300
Total	**24.4637**	**751.5015**	**124.7044**	**2.2344**	**50.4779**	**4.2975**	**54.7754**	**13.8418**	**4.1115**	**17.9533**		**234,108.6205**	**234,108.6205**	**7.4912**		**234,295.9006**

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	0.0723	0.3977	0.6759	1.9500e-003	0.1198	2.6300e-003	0.1225	0.0321	2.4900e-003	0.0346		197.9105	197.9105	0.0115		198.1989
Unmitigated	0.0723	0.3977	0.6759	1.9500e-003	0.1198	2.6300e-003	0.1225	0.0321	2.4900e-003	0.0346		197.9105	197.9105	0.0115		198.1989

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.527625	0.034128	0.170517	0.133884	0.037488	0.008360	0.010441	0.067935	0.001069	0.001802	0.004932	0.000833	0.000986

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
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**

5.2 Energy by Land Use - NaturalGas

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
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

	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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

SDDER_Levee43

Glenn County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	61
Climate Zone	3			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - access roads are all paved

Grading -

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Road Dust -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Parking	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	35,171.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	HaulingTripNumber	4,396.00	40,195.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	0.2849	8.4649	1.5235	0.0236	0.8879	0.0590	0.9469	0.3464	0.0560	0.4023	0.0000	2,239.2394	2,239.2394	0.0827	0.0000	2,241.3063
Maximum	**0.2849**	**8.4649**	**1.5235**	**0.0236**	**0.8879**	**0.0590**	**0.9469**	**0.3464**	**0.0560**	**0.4023**	**0.0000**	**2,239.2394**	**2,239.2394**	**0.0827**	**0.0000**	**2,241.3063**

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					
2019	0.2633	8.2278	1.5266	0.0236	0.8879	0.0459	0.9338	0.3464	0.0440	0.3903	0.0000	2,239.2394	2,239.2394	0.0827	0.0000	2,241.3063
Maximum	**0.2633**	**8.2278**	**1.5266**	**0.0236**	**0.8879**	**0.0459**	**0.9338**	**0.3464**	**0.0440**	**0.3903**	**0.0000**	**2,239.2394**	**2,239.2394**	**0.0827**	**0.0000**	**2,241.3063**

	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	**7.58**	**2.80**	**-0.20**	**0.00**	**0.00**	**22.14**	**1.38**	**0.00**	**21.43**	**2.98**	**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	**7-15-2019**	**9-30-2019**	8.3248	8.0697
		Highest	8.3248	8.0697

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	3.3400e-003	0.0229	0.0347	1.0000e-004	6.4600e-003	1.5000e-004	6.6100e-003	1.7400e-003	1.4000e-004	1.8800e-003	0.0000	9.4046	9.4046	5.8000e-004	0.0000	9.4191
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.7500e-003**	**0.0229**	**0.0347**	**1.0000e-004**	**6.4600e-003**	**1.5000e-004**	**6.6100e-003**	**1.7400e-003**	**1.4000e-004**	**1.8800e-003**	**0.0183**	**10.6178**	**10.6361**	**1.7100e-003**	**1.0000e-005**	**10.6823**

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	3.3400e-003	0.0229	0.0347	1.0000e-004	6.4600e-003	1.5000e-004	6.6100e-003	1.7400e-003	1.4000e-004	1.8800e-003	0.0000	9.4046	9.4046	5.8000e-004	0.0000	9.4191
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.7500e-003**	**0.0229**	**0.0347**	**1.0000e-004**	**6.4600e-003**	**1.5000e-004**	**6.6100e-003**	**1.7400e-003**	**1.4000e-004**	**1.8800e-003**	**0.0183**	**10.6178**	**10.6361**	**1.7100e-003**	**1.0000e-005**	**10.6823**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	40,195.00	16.80	6.60	30.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					0.3746	0.0000	0.3746	0.2051	0.0000	0.2051	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2667	0.1653	2.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	24.9270	24.9270	7.7900e-003	0.0000	25.1217
Total	**0.0253**	**0.2667**	**0.1653**	**2.8000e-004**	**0.3746**	**0.0135**	**0.3881**	**0.2051**	**0.0124**	**0.2176**	**0.0000**	**24.9270**	**24.9270**	**7.7900e-003**	**0.0000**	**25.1217**

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	0.2585	8.1959	1.3495	0.0233	0.5114	0.0455	0.5569	0.1407	0.0435	0.1842	0.0000	2,212.3624	2,212.3624	0.0748	0.0000	2,214.2323
Vendor	7.0000e-005	1.3600e-003	4.5000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2721	0.2721	2.0000e-005	0.0000	0.2726
Worker	1.0200e-003	8.8000e-004	8.2300e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.6780	1.6780	7.0000e-005	0.0000	1.6798
Total	**0.2596**	**8.1982**	**1.3582**	**0.0233**	**0.5133**	**0.0455**	**0.5588**	**0.1412**	**0.0435**	**0.1848**	**0.0000**	**2,214.3124**	**2,214.3124**	**0.0749**	**0.0000**	**2,216.1846**

3.2 Grading - 2019

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					0.3746	0.0000	0.3746	0.2051	0.0000	0.2051	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0297	0.1684	2.8000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.9269	24.9269	7.7900e-003	0.0000	25.1217
Total	**3.7100e-003**	**0.0297**	**0.1684**	**2.8000e-004**	**0.3746**	**4.5000e-004**	**0.3751**	**0.2051**	**4.5000e-004**	**0.2056**	**0.0000**	**24.9269**	**24.9269**	**7.7900e-003**	**0.0000**	**25.1217**

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	0.2585	8.1959	1.3495	0.0233	0.5114	0.0455	0.5569	0.1407	0.0435	0.1842	0.0000	2,212.3624	2,212.3624	0.0748	0.0000	2,214.2323
Vendor	7.0000e-005	1.3600e-003	4.5000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2721	0.2721	2.0000e-005	0.0000	0.2726
Worker	1.0200e-003	8.8000e-004	8.2300e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.6780	1.6780	7.0000e-005	0.0000	1.6798
Total	**0.2596**	**8.1982**	**1.3582**	**0.0233**	**0.5133**	**0.0455**	**0.5588**	**0.1412**	**0.0435**	**0.1848**	**0.0000**	**2,214.3124**	**2,214.3124**	**0.0749**	**0.0000**	**2,216.1846**

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	3.3400e-003	0.0229	0.0347	1.0000e-004	6.4600e-003	1.5000e-004	6.6100e-003	1.7400e-003	1.4000e-004	1.8800e-003	0.0000	9.4046	9.4046	5.8000e-004	0.0000	9.4191
Unmitigated	3.3400e-003	0.0229	0.0347	1.0000e-004	6.4600e-003	1.5000e-004	6.6100e-003	1.7400e-003	1.4000e-004	1.8800e-003	0.0000	9.4046	9.4046	5.8000e-004	0.0000	9.4191

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.527625	0.034128	0.170517	0.133884	0.037488	0.008360	0.010441	0.067935	0.001069	0.001802	0.004932	0.000833	0.000986

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2132	5.0000e-005	1.0000e-005	1.2179
Unmitigated	1.2132	5.0000e-005	1.0000e-005	1.2179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

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

SDDER_Levee44

Colusa County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	56
Climate Zone	3			**Operational Year**	2019
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

SDDER_Levee44 - Colusa County, Summer

Project Characteristics - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Parking	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	559.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	40.00
tblTripsAndVMT	HaulingTripNumber	70.00	638.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	2.9903	39.8888	19.0420	0.0743	9.5330	1.3700	10.9030	4.8932	1.2645	6.1577	0.0000	7,604.4636	7,604.4636	0.9435	0.0000	7,628.0502
Maximum	**2.9903**	**39.8888**	**19.0420**	**0.0743**	**9.5330**	**1.3700**	**10.9030**	**4.8932**	**1.2645**	**6.1577**	**0.0000**	**7,604.4636**	**7,604.4636**	**0.9435**	**0.0000**	**7,628.0502**

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					
2019	0.9335	17.3163	19.3342	0.0743	9.5330	0.1261	9.6591	4.8932	0.1224	5.0157	0.0000	7,604.4636	7,604.4636	0.9435	0.0000	7,628.0502
Maximum	**0.9335**	**17.3163**	**19.3342**	**0.0743**	**9.5330**	**0.1261**	**9.6591**	**4.8932**	**0.1224**	**5.0157**	**0.0000**	**7,604.4636**	**7,604.4636**	**0.9435**	**0.0000**	**7,628.0502**

	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	**68.78**	**56.59**	**-1.53**	**0.00**	**0.00**	**90.80**	**11.41**	**0.00**	**90.32**	**18.55**	**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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0645	0.3524	0.6092	1.8700e-003	0.1196	2.2000e-003	0.1218	0.0320	2.0800e-003	0.0341		189.7211	189.7211	9.9900e-003		189.9709
Total	**0.0667**	**0.3524**	**0.6093**	**1.8700e-003**	**0.1196**	**2.2000e-003**	**0.1218**	**0.0320**	**2.0800e-003**	**0.0341**		**189.7213**	**189.7213**	**9.9900e-003**	**0.0000**	**189.9711**

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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0645	0.3524	0.6092	1.8700e-003	0.1196	2.2000e-003	0.1218	0.0320	2.0800e-003	0.0341		189.7211	189.7211	9.9900e-003		189.9709
Total	**0.0667**	**0.3524**	**0.6093**	**1.8700e-003**	**0.1196**	**2.2000e-003**	**0.1218**	**0.0320**	**2.0800e-003**	**0.0341**		**189.7213**	**189.7213**	**9.9900e-003**	**0.0000**	**189.9711**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	638.00	16.80	6.60	40.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					8.2834	0.0000	8.2834	4.5520	0.0000	4.5520			0.0000			0.0000
Off-Road	2.4101	25.3983	15.7446	0.0266		1.2863	1.2863		1.1845	1.1845		2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**2.4101**	**25.3983**	**15.7446**	**0.0266**	**8.2834**	**1.2863**	**9.5697**	**4.5520**	**1.1845**	**5.7365**		**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.4760	14.2991	2.4211	0.0455	1.0647	0.0816	1.1463	0.2920	0.0781	0.3701		4,770.6763	4,770.6763	0.1165		4,773.5882
Vendor	5.9100e-003	0.1200	0.0391	2.8000e-004	6.1300e-003	8.6000e-004	6.9900e-003	1.7700e-003	8.2000e-004	2.5900e-003		29.0469	29.0469	1.9500e-003		29.0956
Worker	0.0983	0.0713	0.8372	1.8900e-003	0.1788	1.1900e-003	0.1800	0.0474	1.0900e-003	0.0485		187.8569	187.8569	7.1600e-003		188.0360
Total	**0.5802**	**14.4905**	**3.2975**	**0.0477**	**1.2497**	**0.0837**	**1.3333**	**0.3412**	**0.0800**	**0.4212**		**4,987.5801**	**4,987.5801**	**0.1256**		**4,990.7198**

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					8.2834	0.0000	8.2834	4.5520	0.0000	4.5520			0.0000			0.0000
Off-Road	0.3533	2.8259	16.0368	0.0266		0.0424	0.0424		0.0424	0.0424	0.0000	2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**0.3533**	**2.8259**	**16.0368**	**0.0266**	**8.2834**	**0.0424**	**8.3258**	**4.5520**	**0.0424**	**4.5945**	**0.0000**	**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.4760	14.2991	2.4211	0.0455	1.0647	0.0816	1.1463	0.2920	0.0781	0.3701		4,770.6763	4,770.6763	0.1165		4,773.5882
Vendor	5.9100e-003	0.1200	0.0391	2.8000e-004	6.1300e-003	8.6000e-004	6.9900e-003	1.7700e-003	8.2000e-004	2.5900e-003		29.0469	29.0469	1.9500e-003		29.0956
Worker	0.0983	0.0713	0.8372	1.8900e-003	0.1788	1.1900e-003	0.1800	0.0474	1.0900e-003	0.0485		187.8569	187.8569	7.1600e-003		188.0360
Total	**0.5802**	**14.4905**	**3.2975**	**0.0477**	**1.2497**	**0.0837**	**1.3333**	**0.3412**	**0.0800**	**0.4212**		**4,987.5801**	**4,987.5801**	**0.1256**		**4,990.7198**

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	0.0645	0.3524	0.6092	1.8700e-003	0.1196	2.2000e-003	0.1218	0.0320	2.0800e-003	0.0341		189.7211	189.7211	9.9900e-003		189.9709
Unmitigated	0.0645	0.3524	0.6092	1.8700e-003	0.1196	2.2000e-003	0.1218	0.0320	2.0800e-003	0.0341		189.7211	189.7211	9.9900e-003		189.9709

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.521064	0.037554	0.182203	0.139323	0.031591	0.007389	0.008554	0.063166	0.000942	0.001683	0.004985	0.000559	0.000987

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
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**

5.2 Energy by Land Use - NaturalGas

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
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

	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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

SDDER_Levee44

Colusa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	56
Climate Zone	3			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Parking	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	559.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	40.00
tblTripsAndVMT	HaulingTripNumber	70.00	638.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	0.0313	0.4257	0.1992	7.8000e-004	0.0997	0.0144	0.1141	0.0513	0.0133	0.0646	0.0000	72.0033	72.0033	9.0300e-003	0.0000	72.2290
Maximum	**0.0313**	**0.4257**	**0.1992**	**7.8000e-004**	**0.0997**	**0.0144**	**0.1141**	**0.0513**	**0.0133**	**0.0646**	**0.0000**	**72.0033**	**72.0033**	**9.0300e-003**	**0.0000**	**72.2290**

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					
2019	9.7300e-003	0.1886	0.2022	7.8000e-004	0.0997	1.3300e-003	0.1010	0.0513	1.2900e-003	0.0526	0.0000	72.0032	72.0032	9.0300e-003	0.0000	72.2290
Maximum	**9.7300e-003**	**0.1886**	**0.2022**	**7.8000e-004**	**0.0997**	**1.3300e-003**	**0.1010**	**0.0513**	**1.2900e-003**	**0.0526**	**0.0000**	**72.0032**	**72.0032**	**9.0300e-003**	**0.0000**	**72.2290**

	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	**68.93**	**55.68**	**-1.54**	**0.00**	**0.00**	**90.76**	**11.45**	**0.00**	**90.29**	**18.58**	**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	**7-15-2019**	**9-30-2019**	0.4441	0.1890
		Highest	0.4441	0.1890

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.9100e-003	0.0203	0.0307	1.0000e-004	6.4700e-003	1.2000e-004	6.5900e-003	1.7300e-003	1.2000e-004	1.8500e-003	0.0000	8.9655	8.9655	5.0000e-004	0.0000	8.9780
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.3200e-003**	**0.0203**	**0.0307**	**1.0000e-004**	**6.4700e-003**	**1.2000e-004**	**6.5900e-003**	**1.7300e-003**	**1.2000e-004**	**1.8500e-003**	**0.0183**	**10.1786**	**10.1969**	**1.6300e-003**	**1.0000e-005**	**10.2412**

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.9100e-003	0.0203	0.0307	1.0000e-004	6.4700e-003	1.2000e-004	6.5900e-003	1.7300e-003	1.2000e-004	1.8500e-003	0.0000	8.9655	8.9655	5.0000e-004	0.0000	8.9780
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.3200e-003**	**0.0203**	**0.0307**	**1.0000e-004**	**6.4700e-003**	**1.2000e-004**	**6.5900e-003**	**1.7300e-003**	**1.2000e-004**	**1.8500e-003**	**0.0183**	**10.1786**	**10.1969**	**1.6300e-003**	**1.0000e-005**	**10.2412**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	638.00	16.80	6.60	40.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					0.0870	0.0000	0.0870	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2667	0.1653	2.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	24.9270	24.9270	7.7900e-003	0.0000	25.1217
Total	**0.0253**	**0.2667**	**0.1653**	**2.8000e-004**	**0.0870**	**0.0135**	**0.1005**	**0.0478**	**0.0124**	**0.0602**	**0.0000**	**24.9270**	**24.9270**	**7.7900e-003**	**0.0000**	**25.1217**

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	5.0400e-003	0.1569	0.0261	4.8000e-004	0.0109	8.6000e-004	0.0117	2.9900e-003	8.2000e-004	3.8100e-003	0.0000	45.1940	45.1940	1.1600e-003	0.0000	45.2230
Vendor	6.0000e-005	1.2900e-003	4.4000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2725	0.2725	2.0000e-005	0.0000	0.2730
Worker	9.1000e-004	8.2000e-004	7.2700e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.6098	1.6098	6.0000e-005	0.0000	1.6112
Total	**6.0100e-003**	**0.1590**	**0.0339**	**5.0000e-004**	**0.0127**	**8.8000e-004**	**0.0136**	**3.4900e-003**	**8.4000e-004**	**4.3300e-003**	**0.0000**	**47.0763**	**47.0763**	**1.2400e-003**	**0.0000**	**47.1073**

3.2 Grading - 2019

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					0.0870	0.0000	0.0870	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0297	0.1684	2.8000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.9269	24.9269	7.7900e-003	0.0000	25.1217
Total	**3.7100e-003**	**0.0297**	**0.1684**	**2.8000e-004**	**0.0870**	**4.5000e-004**	**0.0874**	**0.0478**	**4.5000e-004**	**0.0483**	**0.0000**	**24.9269**	**24.9269**	**7.7900e-003**	**0.0000**	**25.1217**

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	5.0400e-003	0.1569	0.0261	4.8000e-004	0.0109	8.6000e-004	0.0117	2.9900e-003	8.2000e-004	3.8100e-003	0.0000	45.1940	45.1940	1.1600e-003	0.0000	45.2230
Vendor	6.0000e-005	1.2900e-003	4.4000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2725	0.2725	2.0000e-005	0.0000	0.2730
Worker	9.1000e-004	8.2000e-004	7.2700e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.6098	1.6098	6.0000e-005	0.0000	1.6112
Total	**6.0100e-003**	**0.1590**	**0.0339**	**5.0000e-004**	**0.0127**	**8.8000e-004**	**0.0136**	**3.4900e-003**	**8.4000e-004**	**4.3300e-003**	**0.0000**	**47.0763**	**47.0763**	**1.2400e-003**	**0.0000**	**47.1073**

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	2.9100e-003	0.0203	0.0307	1.0000e-004	6.4700e-003	1.2000e-004	6.5900e-003	1.7300e-003	1.2000e-004	1.8500e-003	0.0000	8.9655	8.9655	5.0000e-004	0.0000	8.9780
Unmitigated	2.9100e-003	0.0203	0.0307	1.0000e-004	6.4700e-003	1.2000e-004	6.5900e-003	1.7300e-003	1.2000e-004	1.8500e-003	0.0000	8.9655	8.9655	5.0000e-004	0.0000	8.9780

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.521064	0.037554	0.182203	0.139323	0.031591	0.007389	0.008554	0.063166	0.000942	0.001683	0.004985	0.000559	0.000987

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2132	5.0000e-005	1.0000e-005	1.2179
Unmitigated	1.2132	5.0000e-005	1.0000e-005	1.2179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

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

SDDER_Levee49

Yolo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	54
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

SDDER_Levee49 - Yolo County, Summer

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	7.88
tblGrading	MaterialExported	0.00	428.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	18.00
tblTripsAndVMT	HaulingTripNumber	54.00	489.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	2.6775	31.7518	17.4128	0.0465	9.2207	1.3139	10.5346	4.7405	1.2109	5.9513	0.0000	4,692.9261	4,692.9261	0.8929	0.0000	4,715.2484
Maximum	**2.6775**	**31.7518**	**17.4128**	**0.0465**	**9.2207**	**1.3139**	**10.5346**	**4.7405**	**1.2109**	**5.9513**	**0.0000**	**4,692.9261**	**4,692.9261**	**0.8929**	**0.0000**	**4,715.2484**

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					
2019	0.6207	9.1793	17.7049	0.0465	9.2207	0.0701	9.2907	4.7405	0.0689	4.8093	0.0000	4,692.9261	4,692.9261	0.8929	0.0000	4,715.2484
Maximum	**0.6207**	**9.1793**	**17.7049**	**0.0465**	**9.2207**	**0.0701**	**9.2907**	**4.7405**	**0.0689**	**4.8093**	**0.0000**	**4,692.9261**	**4,692.9261**	**0.8929**	**0.0000**	**4,715.2484**

SDDER_Levee49 - Yolo County, Summer

	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	**76.82**	**71.09**	**-1.68**	**0.00**	**0.00**	**94.67**	**11.81**	**0.00**	**94.31**	**19.19**	**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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978
Total	**0.0623**	**0.3266**	**0.6142**	**2.0100e-003**	**7.9227**	**2.7700e-003**	**7.9255**	**0.8111**	**2.6200e-003**	**0.8137**		**203.7569**	**203.7569**	**9.6500e-003**	**0.0000**	**203.9980**

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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978
Total	**0.0623**	**0.3266**	**0.6142**	**2.0100e-003**	**7.9227**	**2.7700e-003**	**7.9255**	**0.8111**	**2.6200e-003**	**0.8137**		**203.7569**	**203.7569**	**9.6500e-003**	**0.0000**	**203.9980**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 7.88

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	489.00	15.00	9.00	18.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					8.6883	0.0000	8.6883	4.5960	0.0000	4.5960			0.0000			0.0000
Off-Road	2.4101	25.3983	15.7446	0.0266		1.2863	1.2863		1.1845	1.1845		2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**2.4101**	**25.3983**	**15.7446**	**0.0266**	**8.6883**	**1.2863**	**9.9746**	**4.5960**	**1.1845**	**5.7805**		**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.1822	6.1708	1.0161	0.0179	0.3644	0.0257	0.3901	0.0997	0.0246	0.1243		1,872.1497	1,872.1497	0.0689		1,873.8711
Vendor	4.5100e-003	0.1344	0.0253	3.4000e-004	8.3200e-003	8.8000e-004	9.2000e-003	2.3900e-003	8.5000e-004	3.2400e-003		35.5796	35.5796	1.5500e-003		35.6183
Worker	0.0807	0.0483	0.6268	1.6900e-003	0.1597	1.0000e-003	0.1607	0.0424	9.3000e-004	0.0433		168.3134	168.3134	4.6100e-003		168.4286
Total	**0.2674**	**6.3535**	**1.6682**	**0.0199**	**0.5324**	**0.0276**	**0.5600**	**0.1444**	**0.0264**	**0.1708**		**2,076.0426**	**2,076.0426**	**0.0750**		**2,077.9180**

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					8.6883	0.0000	8.6883	4.5960	0.0000	4.5960			0.0000			0.0000
Off-Road	0.3533	2.8259	16.0368	0.0266		0.0424	0.0424		0.0424	0.0424	0.0000	2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**0.3533**	**2.8259**	**16.0368**	**0.0266**	**8.6883**	**0.0424**	**8.7307**	**4.5960**	**0.0424**	**4.6385**	**0.0000**	**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.1822	6.1708	1.0161	0.0179	0.3644	0.0257	0.3901	0.0997	0.0246	0.1243		1,872.1497	1,872.1497	0.0689		1,873.8711
Vendor	4.5100e-003	0.1344	0.0253	3.4000e-004	8.3200e-003	8.8000e-004	9.2000e-003	2.3900e-003	8.5000e-004	3.2400e-003		35.5796	35.5796	1.5500e-003		35.6183
Worker	0.0807	0.0483	0.6268	1.6900e-003	0.1597	1.0000e-003	0.1607	0.0424	9.3000e-004	0.0433		168.3134	168.3134	4.6100e-003		168.4286
Total	**0.2674**	**6.3535**	**1.6682**	**0.0199**	**0.5324**	**0.0276**	**0.5600**	**0.1444**	**0.0264**	**0.1708**		**2,076.0426**	**2,076.0426**	**0.0750**		**2,077.9180**

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	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978
Unmitigated	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	19,522	19,522
Total	1.89	22.75	16.74	19,522	19,522

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.483219	0.043744	0.205783	0.131644	0.029079	0.006112	0.051218	0.038349	0.001001	0.001999	0.006123	0.000788	0.000940

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
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**

5.2 Energy by Land Use - NaturalGas

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
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

	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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

SDDER_Levee49

Yolo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	54
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

SDDER_Levee49 - Yolo County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	7.88
tblGrading	MaterialExported	0.00	428.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	18.00
tblTripsAndVMT	HaulingTripNumber	54.00	489.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	0.0281	0.3356	0.1824	4.8000e-004	0.0967	0.0138	0.1105	0.0497	0.0127	0.0625	0.0000	44.4039	44.4039	8.5300e-003	0.0000	44.6172
Maximum	**0.0281**	**0.3356**	**0.1824**	**4.8000e-004**	**0.0967**	**0.0138**	**0.1105**	**0.0497**	**0.0127**	**0.0625**	**0.0000**	**44.4039**	**44.4039**	**8.5300e-003**	**0.0000**	**44.6172**

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					
2019	6.4600e-003	0.0985	0.1854	4.8000e-004	0.0967	7.4000e-004	0.0974	0.0497	7.3000e-004	0.0505	0.0000	44.4039	44.4039	8.5300e-003	0.0000	44.6172
Maximum	**6.4600e-003**	**0.0985**	**0.1854**	**4.8000e-004**	**0.0967**	**7.4000e-004**	**0.0974**	**0.0497**	**7.3000e-004**	**0.0505**	**0.0000**	**44.4039**	**44.4039**	**8.5300e-003**	**0.0000**	**44.6172**

	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	**76.98**	**70.63**	**-1.68**	**0.00**	**0.00**	**94.64**	**11.82**	**0.00**	**94.26**	**19.20**	**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	**7-15-2019**	**9-30-2019**	0.3566	0.1015
		Highest	0.3566	0.1015

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.1900e-003**	**0.0190**	**0.0312**	**1.1000e-004**	**0.4429**	**1.6000e-004**	**0.4431**	**0.0453**	**1.5000e-004**	**0.0455**	**0.0183**	**10.9023**	**10.9205**	**1.6100e-003**	**1.0000e-005**	**10.9643**

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.1900e-003**	**0.0190**	**0.0312**	**1.1000e-004**	**0.4429**	**1.6000e-004**	**0.4431**	**0.0453**	**1.5000e-004**	**0.0455**	**0.0183**	**10.9023**	**10.9205**	**1.6100e-003**	**1.0000e-005**	**10.9643**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 7.88

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	489.00	15.00	9.00	18.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					0.0912	0.0000	0.0912	0.0483	0.0000	0.0483	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2667	0.1653	2.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	24.9270	24.9270	7.7900e-003	0.0000	25.1217
Total	**0.0253**	**0.2667**	**0.1653**	**2.8000e-004**	**0.0912**	**0.0135**	**0.1047**	**0.0483**	**0.0124**	**0.0607**	**0.0000**	**24.9270**	**24.9270**	**7.7900e-003**	**0.0000**	**25.1217**

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	1.9400e-003	0.0669	0.0112	1.9000e-004	3.7200e-003	2.7000e-004	3.9900e-003	1.0200e-003	2.6000e-004	1.2800e-003	0.0000	17.6868	17.6868	6.9000e-004	0.0000	17.7040
Vendor	5.0000e-005	1.4500e-003	2.8000e-004	0.0000	9.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3356	0.3356	2.0000e-005	0.0000	0.3360
Worker	7.6000e-004	5.6000e-004	5.5700e-003	2.0000e-005	1.6200e-003	1.0000e-005	1.6300e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4545	1.4545	4.0000e-005	0.0000	1.4554
Total	**2.7500e-003**	**0.0689**	**0.0170**	**2.1000e-004**	**5.4300e-003**	**2.9000e-004**	**5.7100e-003**	**1.4700e-003**	**2.8000e-004**	**1.7500e-003**	**0.0000**	**19.4769**	**19.4769**	**7.5000e-004**	**0.0000**	**19.4955**

3.2 Grading - 2019

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					0.0912	0.0000	0.0912	0.0483	0.0000	0.0483	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0297	0.1684	2.8000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.9269	24.9269	7.7900e-003	0.0000	25.1217
Total	**3.7100e-003**	**0.0297**	**0.1684**	**2.8000e-004**	**0.0912**	**4.5000e-004**	**0.0917**	**0.0483**	**4.5000e-004**	**0.0487**	**0.0000**	**24.9269**	**24.9269**	**7.7900e-003**	**0.0000**	**25.1217**

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	1.9400e-003	0.0669	0.0112	1.9000e-004	3.7200e-003	2.7000e-004	3.9900e-003	1.0200e-003	2.6000e-004	1.2800e-003	0.0000	17.6868	17.6868	6.9000e-004	0.0000	17.7040
Vendor	5.0000e-005	1.4500e-003	2.8000e-004	0.0000	9.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3356	0.3356	2.0000e-005	0.0000	0.3360
Worker	7.6000e-004	5.6000e-004	5.5700e-003	2.0000e-005	1.6200e-003	1.0000e-005	1.6300e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4545	1.4545	4.0000e-005	0.0000	1.4554
Total	**2.7500e-003**	**0.0689**	**0.0170**	**2.1000e-004**	**5.4300e-003**	**2.9000e-004**	**5.7100e-003**	**1.4700e-003**	**2.8000e-004**	**1.7500e-003**	**0.0000**	**19.4769**	**19.4769**	**7.5000e-004**	**0.0000**	**19.4955**

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	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012
Unmitigated	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	19,522	19,522
Total	1.89	22.75	16.74	19,522	19,522

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.483219	0.043744	0.205783	0.131644	0.029079	0.006112	0.051218	0.038349	0.001001	0.001999	0.006123	0.000788	0.000940

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2132	5.0000e-005	1.0000e-005	1.2179
Unmitigated	1.2132	5.0000e-005	1.0000e-005	1.2179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

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

SDDER_Levee50

Yolo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	54
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

SDDER_Levee50 - Yolo County, Summer

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	7.88
tblGrading	MaterialExported	0.00	661.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	18.00
tblTripsAndVMT	HaulingTripNumber	83.00	756.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	2.7770	35.1211	17.9675	0.0562	9.4251	1.3280	10.7530	4.7957	1.2243	6.0201	0.0000	5,715.1428	5,715.1428	0.9305	0.0000	5,738.4050
Maximum	**2.7770**	**35.1211**	**17.9675**	**0.0562**	**9.4251**	**1.3280**	**10.7530**	**4.7957**	**1.2243**	**6.0201**	**0.0000**	**5,715.1428**	**5,715.1428**	**0.9305**	**0.0000**	**5,738.4050**

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					
2019	0.7202	12.5487	18.2597	0.0562	9.4251	0.0841	9.5092	4.7957	0.0823	4.8780	0.0000	5,715.1428	5,715.1428	0.9305	0.0000	5,738.4050
Maximum	**0.7202**	**12.5487**	**18.2597**	**0.0562**	**9.4251**	**0.0841**	**9.5092**	**4.7957**	**0.0823**	**4.8780**	**0.0000**	**5,715.1428**	**5,715.1428**	**0.9305**	**0.0000**	**5,738.4050**

SDDER_Levee50 - Yolo County, Summer

	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	**74.07**	**64.27**	**-1.63**	**0.00**	**0.00**	**93.66**	**11.57**	**0.00**	**93.28**	**18.97**	**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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978
Total	**0.0623**	**0.3266**	**0.6142**	**2.0100e-003**	**7.9227**	**2.7700e-003**	**7.9255**	**0.8111**	**2.6200e-003**	**0.8137**		**203.7569**	**203.7569**	**9.6500e-003**	**0.0000**	**203.9980**

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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978
Total	**0.0623**	**0.3266**	**0.6142**	**2.0100e-003**	**7.9227**	**2.7700e-003**	**7.9255**	**0.8111**	**2.6200e-003**	**0.8137**		**203.7569**	**203.7569**	**9.6500e-003**	**0.0000**	**203.9980**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 7.88

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	756.00	15.00	9.00	18.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					8.6937	0.0000	8.6937	4.5969	0.0000	4.5969			0.0000			0.0000
Off-Road	2.4101	25.3983	15.7446	0.0266		1.2863	1.2863		1.1845	1.1845		2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**2.4101**	**25.3983**	**15.7446**	**0.0266**	**8.6937**	**1.2863**	**9.9800**	**4.5969**	**1.1845**	**5.7813**		**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.2816	9.5401	1.5709	0.0276	0.5633	0.0398	0.6031	0.1541	0.0381	0.1922		2,894.3664	2,894.3664	0.1065		2,897.0277
Vendor	4.5100e-003	0.1344	0.0253	3.4000e-004	8.3200e-003	8.8000e-004	9.2000e-003	2.3900e-003	8.5000e-004	3.2400e-003		35.5796	35.5796	1.5500e-003		35.6183
Worker	0.0807	0.0483	0.6268	1.6900e-003	0.1597	1.0000e-003	0.1607	0.0424	9.3000e-004	0.0433		168.3134	168.3134	4.6100e-003		168.4286
Total	**0.3669**	**9.7228**	**2.2230**	**0.0296**	**0.7313**	**0.0417**	**0.7730**	**0.1989**	**0.0399**	**0.2387**		**3,098.2593**	**3,098.2593**	**0.1126**		**3,101.0746**

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					8.6937	0.0000	8.6937	4.5969	0.0000	4.5969			0.0000			0.0000
Off-Road	0.3533	2.8259	16.0368	0.0266		0.0424	0.0424		0.0424	0.0424	0.0000	2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**0.3533**	**2.8259**	**16.0368**	**0.0266**	**8.6937**	**0.0424**	**8.7362**	**4.5969**	**0.0424**	**4.6393**	**0.0000**	**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.2816	9.5401	1.5709	0.0276	0.5633	0.0398	0.6031	0.1541	0.0381	0.1922		2,894.3664	2,894.3664	0.1065		2,897.0277
Vendor	4.5100e-003	0.1344	0.0253	3.4000e-004	8.3200e-003	8.8000e-004	9.2000e-003	2.3900e-003	8.5000e-004	3.2400e-003		35.5796	35.5796	1.5500e-003		35.6183
Worker	0.0807	0.0483	0.6268	1.6900e-003	0.1597	1.0000e-003	0.1607	0.0424	9.3000e-004	0.0433		168.3134	168.3134	4.6100e-003		168.4286
Total	**0.3669**	**9.7228**	**2.2230**	**0.0296**	**0.7313**	**0.0417**	**0.7730**	**0.1989**	**0.0399**	**0.2387**		**3,098.2593**	**3,098.2593**	**0.1126**		**3,101.0746**

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	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978
Unmitigated	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	19,522	19,522
Total	1.89	22.75	16.74	19,522	19,522

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.483219	0.043744	0.205783	0.131644	0.029079	0.006112	0.051218	0.038349	0.001001	0.001999	0.006123	0.000788	0.000940

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
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**

5.2 Energy by Land Use - NaturalGas

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
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

	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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

SDDER_Levee50

Yolo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	54
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

SDDER_Levee50 - Yolo County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	7.88
tblGrading	MaterialExported	0.00	661.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	18.00
tblTripsAndVMT	HaulingTripNumber	83.00	756.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	0.0291	0.3721	0.1885	5.9000e-004	0.0987	0.0140	0.1127	0.0503	0.0129	0.0632	0.0000	54.0611	54.0611	8.9100e-003	0.0000	54.2838
Maximum	**0.0291**	**0.3721**	**0.1885**	**5.9000e-004**	**0.0987**	**0.0140**	**0.1127**	**0.0503**	**0.0129**	**0.0632**	**0.0000**	**54.0611**	**54.0611**	**8.9100e-003**	**0.0000**	**54.2838**

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					
2019	7.5200e-003	0.1350	0.1915	5.9000e-004	0.0987	8.9000e-004	0.0996	0.0503	8.7000e-004	0.0512	0.0000	54.0611	54.0611	8.9100e-003	0.0000	54.2838
Maximum	**7.5200e-003**	**0.1350**	**0.1915**	**5.9000e-004**	**0.0987**	**8.9000e-004**	**0.0996**	**0.0503**	**8.7000e-004**	**0.0512**	**0.0000**	**54.0611**	**54.0611**	**8.9100e-003**	**0.0000**	**54.2838**

	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	**74.17**	**63.70**	**-1.63**	**0.00**	**0.00**	**93.62**	**11.59**	**0.00**	**93.23**	**18.98**	**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	**7-15-2019**	**9-30-2019**	0.3925	0.1374
		Highest	0.3925	0.1374

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.1900e-003**	**0.0190**	**0.0312**	**1.1000e-004**	**0.4429**	**1.6000e-004**	**0.4431**	**0.0453**	**1.5000e-004**	**0.0455**	**0.0183**	**10.9023**	**10.9205**	**1.6100e-003**	**1.0000e-005**	**10.9643**

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.1900e-003**	**0.0190**	**0.0312**	**1.1000e-004**	**0.4429**	**1.6000e-004**	**0.4431**	**0.0453**	**1.5000e-004**	**0.0455**	**0.0183**	**10.9023**	**10.9205**	**1.6100e-003**	**1.0000e-005**	**10.9643**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 7.88

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	756.00	15.00	9.00	18.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					0.0913	0.0000	0.0913	0.0483	0.0000	0.0483	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2667	0.1653	2.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	24.9270	24.9270	7.7900e-003	0.0000	25.1217
Total	**0.0253**	**0.2667**	**0.1653**	**2.8000e-004**	**0.0913**	**0.0135**	**0.1048**	**0.0483**	**0.0124**	**0.0607**	**0.0000**	**24.9270**	**24.9270**	**7.7900e-003**	**0.0000**	**25.1217**

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	3.0000e-003	0.1034	0.0173	2.9000e-004	5.7500e-003	4.2000e-004	6.1700e-003	1.5800e-003	4.0000e-004	1.9800e-003	0.0000	27.3441	27.3441	1.0600e-003	0.0000	27.3706
Vendor	5.0000e-005	1.4500e-003	2.8000e-004	0.0000	9.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3356	0.3356	2.0000e-005	0.0000	0.3360
Worker	7.6000e-004	5.6000e-004	5.5700e-003	2.0000e-005	1.6200e-003	1.0000e-005	1.6300e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4545	1.4545	4.0000e-005	0.0000	1.4554
Total	**3.8100e-003**	**0.1054**	**0.0231**	**3.1000e-004**	**7.4600e-003**	**4.4000e-004**	**7.8900e-003**	**2.0300e-003**	**4.2000e-004**	**2.4500e-003**	**0.0000**	**29.1342**	**29.1342**	**1.1200e-003**	**0.0000**	**29.1621**

3.2 Grading - 2019

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					0.0913	0.0000	0.0913	0.0483	0.0000	0.0483	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0297	0.1684	2.8000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.9269	24.9269	7.7900e-003	0.0000	25.1217
Total	**3.7100e-003**	**0.0297**	**0.1684**	**2.8000e-004**	**0.0913**	**4.5000e-004**	**0.0917**	**0.0483**	**4.5000e-004**	**0.0487**	**0.0000**	**24.9269**	**24.9269**	**7.7900e-003**	**0.0000**	**25.1217**

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	3.0000e-003	0.1034	0.0173	2.9000e-004	5.7500e-003	4.2000e-004	6.1700e-003	1.5800e-003	4.0000e-004	1.9800e-003	0.0000	27.3441	27.3441	1.0600e-003	0.0000	27.3706
Vendor	5.0000e-005	1.4500e-003	2.8000e-004	0.0000	9.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3356	0.3356	2.0000e-005	0.0000	0.3360
Worker	7.6000e-004	5.6000e-004	5.5700e-003	2.0000e-005	1.6200e-003	1.0000e-005	1.6300e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4545	1.4545	4.0000e-005	0.0000	1.4554
Total	**3.8100e-003**	**0.1054**	**0.0231**	**3.1000e-004**	**7.4600e-003**	**4.4000e-004**	**7.8900e-003**	**2.0300e-003**	**4.2000e-004**	**2.4500e-003**	**0.0000**	**29.1342**	**29.1342**	**1.1200e-003**	**0.0000**	**29.1621**

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	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012
Unmitigated	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	19,522	19,522
Total	1.89	22.75	16.74	19,522	19,522

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.483219	0.043744	0.205783	0.131644	0.029079	0.006112	0.051218	0.038349	0.001001	0.001999	0.006123	0.000788	0.000940

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2132	5.0000e-005	1.0000e-005	1.2179
Unmitigated	1.2132	5.0000e-005	1.0000e-005	1.2179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

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

SDDER_Levee51

Yolo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	54
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

SDDER_Levee51 - Yolo County, Summer

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	7.88
tblGrading	MaterialExported	0.00	89.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	18.00
tblTripsAndVMT	HaulingTripNumber	11.00	102.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	2.5333	26.8682	16.6086	0.0324	8.9244	1.2936	10.2179	4.6604	1.1914	5.8518	0.0000	3,211.2862	3,211.2862	0.8384	0.0000	3,232.2461
Maximum	**2.5333**	**26.8682**	**16.6086**	**0.0324**	**8.9244**	**1.2936**	**10.2179**	**4.6604**	**1.1914**	**5.8518**	**0.0000**	**3,211.2862**	**3,211.2862**	**0.8384**	**0.0000**	**3,232.2461**

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					
2019	0.4766	4.2957	16.9008	0.0324	8.9244	0.0497	8.9741	4.6604	0.0494	4.7097	0.0000	3,211.2862	3,211.2862	0.8384	0.0000	3,232.2461
Maximum	**0.4766**	**4.2957**	**16.9008**	**0.0324**	**8.9244**	**0.0497**	**8.9741**	**4.6604**	**0.0494**	**4.7097**	**0.0000**	**3,211.2862**	**3,211.2862**	**0.8384**	**0.0000**	**3,232.2461**

SDDER_Levee51 - Yolo County, Summer

	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	**81.19**	**84.01**	**-1.76**	**0.00**	**0.00**	**96.16**	**12.17**	**0.00**	**95.86**	**19.52**	**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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978
Total	**0.0623**	**0.3266**	**0.6142**	**2.0100e-003**	**7.9227**	**2.7700e-003**	**7.9255**	**0.8111**	**2.6200e-003**	**0.8137**		**203.7569**	**203.7569**	**9.6500e-003**	**0.0000**	**203.9980**

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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978
Total	**0.0623**	**0.3266**	**0.6142**	**2.0100e-003**	**7.9227**	**2.7700e-003**	**7.9255**	**0.8111**	**2.6200e-003**	**0.8137**		**203.7569**	**203.7569**	**9.6500e-003**	**0.0000**	**203.9980**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 7.88

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	102.00	15.00	9.00	18.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					8.6804	0.0000	8.6804	4.5949	0.0000	4.5949			0.0000			0.0000
Off-Road	2.4101	25.3983	15.7446	0.0266		1.2863	1.2863		1.1845	1.1845		2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**2.4101**	**25.3983**	**15.7446**	**0.0266**	**8.6804**	**1.2863**	**9.9667**	**4.5949**	**1.1845**	**5.7793**		**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.0380	1.2872	0.2119	3.7300e-003	0.0760	5.3700e-003	0.0814	0.0208	5.1400e-003	0.0259		390.5098	390.5098	0.0144		390.8688
Vendor	4.5100e-003	0.1344	0.0253	3.4000e-004	8.3200e-003	8.8000e-004	9.2000e-003	2.3900e-003	8.5000e-004	3.2400e-003		35.5796	35.5796	1.5500e-003		35.6183
Worker	0.0807	0.0483	0.6268	1.6900e-003	0.1597	1.0000e-003	0.1607	0.0424	9.3000e-004	0.0433		168.3134	168.3134	4.6100e-003		168.4286
Total	**0.1232**	**1.4699**	**0.8640**	**5.7600e-003**	**0.2440**	**7.2500e-003**	**0.2513**	**0.0655**	**6.9200e-003**	**0.0724**		**594.4027**	**594.4027**	**0.0205**		**594.9157**

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					8.6804	0.0000	8.6804	4.5949	0.0000	4.5949			0.0000			0.0000
Off-Road	0.3533	2.8259	16.0368	0.0266		0.0424	0.0424		0.0424	0.0424	0.0000	2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**0.3533**	**2.8259**	**16.0368**	**0.0266**	**8.6804**	**0.0424**	**8.7228**	**4.5949**	**0.0424**	**4.6373**	**0.0000**	**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.0380	1.2872	0.2119	3.7300e-003	0.0760	5.3700e-003	0.0814	0.0208	5.1400e-003	0.0259		390.5098	390.5098	0.0144		390.8688
Vendor	4.5100e-003	0.1344	0.0253	3.4000e-004	8.3200e-003	8.8000e-004	9.2000e-003	2.3900e-003	8.5000e-004	3.2400e-003		35.5796	35.5796	1.5500e-003		35.6183
Worker	0.0807	0.0483	0.6268	1.6900e-003	0.1597	1.0000e-003	0.1607	0.0424	9.3000e-004	0.0433		168.3134	168.3134	4.6100e-003		168.4286
Total	**0.1232**	**1.4699**	**0.8640**	**5.7600e-003**	**0.2440**	**7.2500e-003**	**0.2513**	**0.0655**	**6.9200e-003**	**0.0724**		**594.4027**	**594.4027**	**0.0205**		**594.9157**

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	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978
Unmitigated	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	19,522	19,522
Total	1.89	22.75	16.74	19,522	19,522

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.483219	0.043744	0.205783	0.131644	0.029079	0.006112	0.051218	0.038349	0.001001	0.001999	0.006123	0.000788	0.000940

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
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**

5.2 Energy by Land Use - NaturalGas

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
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

	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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

SDDER_Levee51

Yolo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	54
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

SDDER_Levee51 - Yolo County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	7.88
tblGrading	MaterialExported	0.00	89.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	18.00
tblTripsAndVMT	HaulingTripNumber	11.00	102.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	0.0265	0.2826	0.1735	3.4000e-004	0.0936	0.0136	0.1072	0.0489	0.0125	0.0614	0.0000	30.4064	30.4064	7.9900e-003	0.0000	30.6061
Maximum	**0.0265**	**0.2826**	**0.1735**	**3.4000e-004**	**0.0936**	**0.0136**	**0.1072**	**0.0489**	**0.0125**	**0.0614**	**0.0000**	**30.4064**	**30.4064**	**7.9900e-003**	**0.0000**	**30.6061**

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					
2019	4.9200e-003	0.0456	0.1766	3.4000e-004	0.0936	5.2000e-004	0.0942	0.0489	5.2000e-004	0.0494	0.0000	30.4063	30.4063	7.9900e-003	0.0000	30.6060
Maximum	**4.9200e-003**	**0.0456**	**0.1766**	**3.4000e-004**	**0.0936**	**5.2000e-004**	**0.0942**	**0.0489**	**5.2000e-004**	**0.0494**	**0.0000**	**30.4063**	**30.4063**	**7.9900e-003**	**0.0000**	**30.6060**

	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	**81.45**	**83.86**	**-1.77**	**0.00**	**0.00**	**96.17**	**12.18**	**0.00**	**95.84**	**19.52**	**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	**7-15-2019**	**9-30-2019**	0.3045	0.0494
		Highest	0.3045	0.0494

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.1900e-003**	**0.0190**	**0.0312**	**1.1000e-004**	**0.4429**	**1.6000e-004**	**0.4431**	**0.0453**	**1.5000e-004**	**0.0455**	**0.0183**	**10.9023**	**10.9205**	**1.6100e-003**	**1.0000e-005**	**10.9643**

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.1900e-003**	**0.0190**	**0.0312**	**1.1000e-004**	**0.4429**	**1.6000e-004**	**0.4431**	**0.0453**	**1.5000e-004**	**0.0455**	**0.0183**	**10.9023**	**10.9205**	**1.6100e-003**	**1.0000e-005**	**10.9643**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 7.88

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	102.00	15.00	9.00	18.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					0.0911	0.0000	0.0911	0.0483	0.0000	0.0483	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2667	0.1653	2.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	24.9270	24.9270	7.7900e-003	0.0000	25.1217
Total	**0.0253**	**0.2667**	**0.1653**	**2.8000e-004**	**0.0911**	**0.0135**	**0.1047**	**0.0483**	**0.0124**	**0.0607**	**0.0000**	**24.9270**	**24.9270**	**7.7900e-003**	**0.0000**	**25.1217**

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	4.0000e-004	0.0140	2.3300e-003	4.0000e-005	7.8000e-004	6.0000e-005	8.3000e-004	2.1000e-004	5.0000e-005	2.7000e-004	0.0000	3.6893	3.6893	1.4000e-004	0.0000	3.6929
Vendor	5.0000e-005	1.4500e-003	2.8000e-004	0.0000	9.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3356	0.3356	2.0000e-005	0.0000	0.3360
Worker	7.6000e-004	5.6000e-004	5.5700e-003	2.0000e-005	1.6200e-003	1.0000e-005	1.6300e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4545	1.4545	4.0000e-005	0.0000	1.4554
Total	**1.2100e-003**	**0.0160**	**8.1800e-003**	**6.0000e-005**	**2.4900e-003**	**8.0000e-005**	**2.5500e-003**	**6.6000e-004**	**7.0000e-005**	**7.4000e-004**	**0.0000**	**5.4794**	**5.4794**	**2.0000e-004**	**0.0000**	**5.4843**

3.2 Grading - 2019

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					0.0911	0.0000	0.0911	0.0483	0.0000	0.0483	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0297	0.1684	2.8000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.9269	24.9269	7.7900e-003	0.0000	25.1217
Total	**3.7100e-003**	**0.0297**	**0.1684**	**2.8000e-004**	**0.0911**	**4.5000e-004**	**0.0916**	**0.0483**	**4.5000e-004**	**0.0487**	**0.0000**	**24.9269**	**24.9269**	**7.7900e-003**	**0.0000**	**25.1217**

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	4.0000e-004	0.0140	2.3300e-003	4.0000e-005	7.8000e-004	6.0000e-005	8.3000e-004	2.1000e-004	5.0000e-005	2.7000e-004	0.0000	3.6893	3.6893	1.4000e-004	0.0000	3.6929
Vendor	5.0000e-005	1.4500e-003	2.8000e-004	0.0000	9.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3356	0.3356	2.0000e-005	0.0000	0.3360
Worker	7.6000e-004	5.6000e-004	5.5700e-003	2.0000e-005	1.6200e-003	1.0000e-005	1.6300e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4545	1.4545	4.0000e-005	0.0000	1.4554
Total	**1.2100e-003**	**0.0160**	**8.1800e-003**	**6.0000e-005**	**2.4900e-003**	**8.0000e-005**	**2.5500e-003**	**6.6000e-004**	**7.0000e-005**	**7.4000e-004**	**0.0000**	**5.4794**	**5.4794**	**2.0000e-004**	**0.0000**	**5.4843**

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	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012
Unmitigated	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	19,522	19,522
Total	1.89	22.75	16.74	19,522	19,522

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.483219	0.043744	0.205783	0.131644	0.029079	0.006112	0.051218	0.038349	0.001001	0.001999	0.006123	0.000788	0.000940

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2132	5.0000e-005	1.0000e-005	1.2179
Unmitigated	1.2132	5.0000e-005	1.0000e-005	1.2179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

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

SDDER_Levee52

Yolo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	54
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

SDDER_Levee52 - Yolo County, Summer

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	7.88
tblGrading	MaterialExported	0.00	205.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	15.00
tblTripsAndVMT	HaulingTripNumber	26.00	234.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	2.5720	28.2342	16.8240	0.0360	8.9964	1.2986	10.2951	4.6798	1.1962	5.8760	0.0000	3,590.2069	3,590.2069	0.8560	0.0000	3,611.6072
Maximum	**2.5720**	**28.2342**	**16.8240**	**0.0360**	**8.9964**	**1.2986**	**10.2951**	**4.6798**	**1.1962**	**5.8760**	**0.0000**	**3,590.2069**	**3,590.2069**	**0.8560**	**0.0000**	**3,611.6072**

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					
2019	0.5152	5.6617	17.1162	0.0360	8.9964	0.0548	9.0512	4.6798	0.0542	4.7340	0.0000	3,590.2069	3,590.2069	0.8560	0.0000	3,611.6072
Maximum	**0.5152**	**5.6617**	**17.1162**	**0.0360**	**8.9964**	**0.0548**	**9.0512**	**4.6798**	**0.0542**	**4.7340**	**0.0000**	**3,590.2069**	**3,590.2069**	**0.8560**	**0.0000**	**3,611.6072**

SDDER_Levee52 - Yolo County, Summer

	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	**79.97**	**79.95**	**-1.74**	**0.00**	**0.00**	**95.78**	**12.08**	**0.00**	**95.47**	**19.44**	**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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978
Total	**0.0623**	**0.3266**	**0.6142**	**2.0100e-003**	**7.9227**	**2.7700e-003**	**7.9255**	**0.8111**	**2.6200e-003**	**0.8137**		**203.7569**	**203.7569**	**9.6500e-003**	**0.0000**	**203.9980**

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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978
Total	**0.0623**	**0.3266**	**0.6142**	**2.0100e-003**	**7.9227**	**2.7700e-003**	**7.9255**	**0.8111**	**2.6200e-003**	**0.8137**		**203.7569**	**203.7569**	**9.6500e-003**	**0.0000**	**203.9980**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 7.88

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	234.00	15.00	9.00	15.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					8.6831	0.0000	8.6831	4.5953	0.0000	4.5953			0.0000			0.0000
Off-Road	2.4101	25.3983	15.7446	0.0266		1.2863	1.2863		1.1845	1.1845		2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**2.4101**	**25.3983**	**15.7446**	**0.0266**	**8.6831**	**1.2863**	**9.9694**	**4.5953**	**1.1845**	**5.7797**		**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.0767	2.6532	0.4273	7.3400e-003	0.1453	0.0104	0.1558	0.0398	9.9900e-003	0.0498		769.4305	769.4305	0.0320		770.2300
Vendor	4.5100e-003	0.1344	0.0253	3.4000e-004	8.3200e-003	8.8000e-004	9.2000e-003	2.3900e-003	8.5000e-004	3.2400e-003		35.5796	35.5796	1.5500e-003		35.6183
Worker	0.0807	0.0483	0.6268	1.6900e-003	0.1597	1.0000e-003	0.1607	0.0424	9.3000e-004	0.0433		168.3134	168.3134	4.6100e-003		168.4286
Total	**0.1619**	**2.8359**	**1.0794**	**9.3700e-003**	**0.3133**	**0.0123**	**0.3257**	**0.0845**	**0.0118**	**0.0963**		**973.3234**	**973.3234**	**0.0381**		**974.2768**

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					8.6831	0.0000	8.6831	4.5953	0.0000	4.5953			0.0000			0.0000
Off-Road	0.3533	2.8259	16.0368	0.0266		0.0424	0.0424		0.0424	0.0424	0.0000	2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**0.3533**	**2.8259**	**16.0368**	**0.0266**	**8.6831**	**0.0424**	**8.7255**	**4.5953**	**0.0424**	**4.6377**	**0.0000**	**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.0767	2.6532	0.4273	7.3400e-003	0.1453	0.0104	0.1558	0.0398	9.9900e-003	0.0498		769.4305	769.4305	0.0320		770.2300
Vendor	4.5100e-003	0.1344	0.0253	3.4000e-004	8.3200e-003	8.8000e-004	9.2000e-003	2.3900e-003	8.5000e-004	3.2400e-003		35.5796	35.5796	1.5500e-003		35.6183
Worker	0.0807	0.0483	0.6268	1.6900e-003	0.1597	1.0000e-003	0.1607	0.0424	9.3000e-004	0.0433		168.3134	168.3134	4.6100e-003		168.4286
Total	**0.1619**	**2.8359**	**1.0794**	**9.3700e-003**	**0.3133**	**0.0123**	**0.3257**	**0.0845**	**0.0118**	**0.0963**		**973.3234**	**973.3234**	**0.0381**		**974.2768**

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	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978
Unmitigated	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	19,522	19,522
Total	1.89	22.75	16.74	19,522	19,522

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.483219	0.043744	0.205783	0.131644	0.029079	0.006112	0.051218	0.038349	0.001001	0.001999	0.006123	0.000788	0.000940

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
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**

5.2 Energy by Land Use - NaturalGas

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
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

	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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

SDDER_Levee52

Yolo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	54
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

SDDER_Levee52 - Yolo County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	7.88
tblGrading	MaterialExported	0.00	205.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	15.00
tblTripsAndVMT	HaulingTripNumber	26.00	234.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	0.0269	0.2973	0.1759	3.8000e-004	0.0944	0.0136	0.1080	0.0491	0.0126	0.0617	0.0000	33.9763	33.9763	8.1700e-003	0.0000	34.1804
Maximum	**0.0269**	**0.2973**	**0.1759**	**3.8000e-004**	**0.0944**	**0.0136**	**0.1080**	**0.0491**	**0.0126**	**0.0617**	**0.0000**	**33.9763**	**33.9763**	**8.1700e-003**	**0.0000**	**34.1804**

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					
2019	5.3400e-003	0.0603	0.1790	3.8000e-004	0.0944	5.8000e-004	0.0949	0.0491	5.7000e-004	0.0497	0.0000	33.9762	33.9762	8.1700e-003	0.0000	34.1804
Maximum	**5.3400e-003**	**0.0603**	**0.1790**	**3.8000e-004**	**0.0944**	**5.8000e-004**	**0.0949**	**0.0491**	**5.7000e-004**	**0.0497**	**0.0000**	**33.9762**	**33.9762**	**8.1700e-003**	**0.0000**	**34.1804**

	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	**80.17**	**79.71**	**-1.74**	**0.00**	**0.00**	**95.75**	**12.09**	**0.00**	**95.46**	**19.46**	**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	**7-15-2019**	**9-30-2019**	0.3191	0.0640
		Highest	0.3191	0.0640

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.1900e-003**	**0.0190**	**0.0312**	**1.1000e-004**	**0.4429**	**1.6000e-004**	**0.4431**	**0.0453**	**1.5000e-004**	**0.0455**	**0.0183**	**10.9023**	**10.9205**	**1.6100e-003**	**1.0000e-005**	**10.9643**

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.1900e-003**	**0.0190**	**0.0312**	**1.1000e-004**	**0.4429**	**1.6000e-004**	**0.4431**	**0.0453**	**1.5000e-004**	**0.0455**	**0.0183**	**10.9023**	**10.9205**	**1.6100e-003**	**1.0000e-005**	**10.9643**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 7.88

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	234.00	15.00	9.00	15.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					0.0912	0.0000	0.0912	0.0483	0.0000	0.0483	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2667	0.1653	2.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	24.9270	24.9270	7.7900e-003	0.0000	25.1217
Total	**0.0253**	**0.2667**	**0.1653**	**2.8000e-004**	**0.0912**	**0.0135**	**0.1047**	**0.0483**	**0.0124**	**0.0607**	**0.0000**	**24.9270**	**24.9270**	**7.7900e-003**	**0.0000**	**25.1217**

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	8.2000e-004	0.0287	4.7400e-003	8.0000e-005	1.4800e-003	1.1000e-004	1.5900e-003	4.1000e-004	1.1000e-004	5.1000e-004	0.0000	7.2592	7.2592	3.2000e-004	0.0000	7.2672
Vendor	5.0000e-005	1.4500e-003	2.8000e-004	0.0000	9.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3356	0.3356	2.0000e-005	0.0000	0.3360
Worker	7.6000e-004	5.6000e-004	5.5700e-003	2.0000e-005	1.6200e-003	1.0000e-005	1.6300e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4545	1.4545	4.0000e-005	0.0000	1.4554
Total	**1.6300e-003**	**0.0307**	**0.0106**	**1.0000e-004**	**3.1900e-003**	**1.3000e-004**	**3.3100e-003**	**8.6000e-004**	**1.3000e-004**	**9.8000e-004**	**0.0000**	**9.0493**	**9.0493**	**3.8000e-004**	**0.0000**	**9.0587**

3.2 Grading - 2019

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					0.0912	0.0000	0.0912	0.0483	0.0000	0.0483	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0297	0.1684	2.8000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.9269	24.9269	7.7900e-003	0.0000	25.1217
Total	**3.7100e-003**	**0.0297**	**0.1684**	**2.8000e-004**	**0.0912**	**4.5000e-004**	**0.0916**	**0.0483**	**4.5000e-004**	**0.0487**	**0.0000**	**24.9269**	**24.9269**	**7.7900e-003**	**0.0000**	**25.1217**

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	8.2000e-004	0.0287	4.7400e-003	8.0000e-005	1.4800e-003	1.1000e-004	1.5900e-003	4.1000e-004	1.1000e-004	5.1000e-004	0.0000	7.2592	7.2592	3.2000e-004	0.0000	7.2672
Vendor	5.0000e-005	1.4500e-003	2.8000e-004	0.0000	9.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3356	0.3356	2.0000e-005	0.0000	0.3360
Worker	7.6000e-004	5.6000e-004	5.5700e-003	2.0000e-005	1.6200e-003	1.0000e-005	1.6300e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4545	1.4545	4.0000e-005	0.0000	1.4554
Total	**1.6300e-003**	**0.0307**	**0.0106**	**1.0000e-004**	**3.1900e-003**	**1.3000e-004**	**3.3100e-003**	**8.6000e-004**	**1.3000e-004**	**9.8000e-004**	**0.0000**	**9.0493**	**9.0493**	**3.8000e-004**	**0.0000**	**9.0587**

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	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012
Unmitigated	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	19,522	19,522
Total	1.89	22.75	16.74	19,522	19,522

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.483219	0.043744	0.205783	0.131644	0.029079	0.006112	0.051218	0.038349	0.001001	0.001999	0.006123	0.000788	0.000940

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2132	5.0000e-005	1.0000e-005	1.2179
Unmitigated	1.2132	5.0000e-005	1.0000e-005	1.2179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

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

SDDER_Levee53

Yolo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	54
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

SDDER_Levee53 - Yolo County, Summer

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	108.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	15.00
tblTripsAndVMT	HaulingTripNumber	14.00	124.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	2.5360	26.9869	16.6231	0.0325	8.5279	1.2937	9.8216	4.6178	1.1915	5.8093	0.0000	3,228.5088	3,228.5088	0.8410	0.0000	3,249.5333
Maximum	**2.5360**	**26.9869**	**16.6231**	**0.0325**	**8.5279**	**1.2937**	**9.8216**	**4.6178**	**1.1915**	**5.8093**	**0.0000**	**3,228.5088**	**3,228.5088**	**0.8410**	**0.0000**	**3,249.5333**

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					
2019	0.4792	4.4145	16.9153	0.0325	8.5279	0.0499	8.5778	4.6178	0.0495	4.6673	0.0000	3,228.5088	3,228.5088	0.8410	0.0000	3,249.5333
Maximum	**0.4792**	**4.4145**	**16.9153**	**0.0325**	**8.5279**	**0.0499**	**8.5778**	**4.6178**	**0.0495**	**4.6673**	**0.0000**	**3,228.5088**	**3,228.5088**	**0.8410**	**0.0000**	**3,249.5333**

SDDER_Levee53 - Yolo County, Summer

	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	**81.10**	**83.64**	**-1.76**	**0.00**	**0.00**	**96.15**	**12.66**	**0.00**	**95.84**	**19.66**	**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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978
Total	**0.0623**	**0.3266**	**0.6142**	**2.0100e-003**	**7.9227**	**2.7700e-003**	**7.9255**	**0.8111**	**2.6200e-003**	**0.8137**		**203.7569**	**203.7569**	**9.6500e-003**	**0.0000**	**203.9980**

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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978
Total	**0.0623**	**0.3266**	**0.6142**	**2.0100e-003**	**7.9227**	**2.7700e-003**	**7.9255**	**0.8111**	**2.6200e-003**	**0.8137**		**203.7569**	**203.7569**	**9.6500e-003**	**0.0000**	**203.9980**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	124.00	15.00	9.00	15.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					8.2829	0.0000	8.2829	4.5520	0.0000	4.5520			0.0000			0.0000
Off-Road	2.4101	25.3983	15.7446	0.0266		1.2863	1.2863		1.1845	1.1845		2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**2.4101**	**25.3983**	**15.7446**	**0.0266**	**8.2829**	**1.2863**	**9.5692**	**4.5520**	**1.1845**	**5.7364**		**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.0406	1.4060	0.2265	3.8900e-003	0.0770	5.5300e-003	0.0826	0.0211	5.3000e-003	0.0264		407.7324	407.7324	0.0170		408.1560
Vendor	4.5100e-003	0.1344	0.0253	3.4000e-004	8.3200e-003	8.8000e-004	9.2000e-003	2.3900e-003	8.5000e-004	3.2400e-003		35.5796	35.5796	1.5500e-003		35.6183
Worker	0.0807	0.0483	0.6268	1.6900e-003	0.1597	1.0000e-003	0.1607	0.0424	9.3000e-004	0.0433		168.3134	168.3134	4.6100e-003		168.4286
Total	**0.1258**	**1.5886**	**0.8785**	**5.9200e-003**	**0.2450**	**7.4100e-003**	**0.2524**	**0.0658**	**7.0800e-003**	**0.0729**		**611.6254**	**611.6254**	**0.0231**		**612.2029**

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					8.2829	0.0000	8.2829	4.5520	0.0000	4.5520			0.0000			0.0000
Off-Road	0.3533	2.8259	16.0368	0.0266		0.0424	0.0424		0.0424	0.0424	0.0000	2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**0.3533**	**2.8259**	**16.0368**	**0.0266**	**8.2829**	**0.0424**	**8.3253**	**4.5520**	**0.0424**	**4.5944**	**0.0000**	**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.0406	1.4060	0.2265	3.8900e-003	0.0770	5.5300e-003	0.0826	0.0211	5.3000e-003	0.0264		407.7324	407.7324	0.0170		408.1560
Vendor	4.5100e-003	0.1344	0.0253	3.4000e-004	8.3200e-003	8.8000e-004	9.2000e-003	2.3900e-003	8.5000e-004	3.2400e-003		35.5796	35.5796	1.5500e-003		35.6183
Worker	0.0807	0.0483	0.6268	1.6900e-003	0.1597	1.0000e-003	0.1607	0.0424	9.3000e-004	0.0433		168.3134	168.3134	4.6100e-003		168.4286
Total	**0.1258**	**1.5886**	**0.8785**	**5.9200e-003**	**0.2450**	**7.4100e-003**	**0.2524**	**0.0658**	**7.0800e-003**	**0.0729**		**611.6254**	**611.6254**	**0.0231**		**612.2029**

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	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978
Unmitigated	0.0601	0.3266	0.6141	2.0100e-003	7.9227	2.7700e-003	7.9255	0.8111	2.6200e-003	0.8137		203.7567	203.7567	9.6500e-003		203.9978

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	19,522	19,522
Total	1.89	22.75	16.74	19,522	19,522

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.483219	0.043744	0.205783	0.131644	0.029079	0.006112	0.051218	0.038349	0.001001	0.001999	0.006123	0.000788	0.000940

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
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**

5.2 Energy by Land Use - NaturalGas

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
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

	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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

SDDER_Levee53

Yolo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	54
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

SDDER_Levee53 - Yolo County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	108.50
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblOnRoadDust	HaulingPercentPave	94.00	100.00
tblOnRoadDust	VendorPercentPave	94.00	100.00
tblOnRoadDust	WorkerPercentPave	94.00	100.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	15.00
tblTripsAndVMT	HaulingTripNumber	14.00	124.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	0.0266	0.2839	0.1737	3.4000e-004	0.0895	0.0136	0.1031	0.0485	0.0125	0.0610	0.0000	30.5638	30.5638	8.0100e-003	0.0000	30.7642
Maximum	**0.0266**	**0.2839**	**0.1737**	**3.4000e-004**	**0.0895**	**0.0136**	**0.1031**	**0.0485**	**0.0125**	**0.0610**	**0.0000**	**30.5638**	**30.5638**	**8.0100e-003**	**0.0000**	**30.7642**

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					
2019	4.9500e-003	0.0469	0.1768	3.4000e-004	0.0895	5.2000e-004	0.0900	0.0485	5.2000e-004	0.0490	0.0000	30.5638	30.5638	8.0100e-003	0.0000	30.7642
Maximum	**4.9500e-003**	**0.0469**	**0.1768**	**3.4000e-004**	**0.0895**	**5.2000e-004**	**0.0900**	**0.0485**	**5.2000e-004**	**0.0490**	**0.0000**	**30.5638**	**30.5638**	**8.0100e-003**	**0.0000**	**30.7642**

	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	**81.36**	**83.49**	**-1.77**	**0.00**	**0.00**	**96.17**	**12.67**	**0.00**	**95.84**	**19.66**	**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	**7-15-2019**	**9-30-2019**	0.3058	0.0507
		Highest	0.3058	0.0507

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.1900e-003**	**0.0190**	**0.0312**	**1.1000e-004**	**0.4429**	**1.6000e-004**	**0.4431**	**0.0453**	**1.5000e-004**	**0.0455**	**0.0183**	**10.9023**	**10.9205**	**1.6100e-003**	**1.0000e-005**	**10.9643**

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.1900e-003**	**0.0190**	**0.0312**	**1.1000e-004**	**0.4429**	**1.6000e-004**	**0.4431**	**0.0453**	**1.5000e-004**	**0.0455**	**0.0183**	**10.9023**	**10.9205**	**1.6100e-003**	**1.0000e-005**	**10.9643**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	124.00	15.00	9.00	15.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					0.0870	0.0000	0.0870	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2667	0.1653	2.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	24.9270	24.9270	7.7900e-003	0.0000	25.1217
Total	**0.0253**	**0.2667**	**0.1653**	**2.8000e-004**	**0.0870**	**0.0135**	**0.1005**	**0.0478**	**0.0124**	**0.0602**	**0.0000**	**24.9270**	**24.9270**	**7.7900e-003**	**0.0000**	**25.1217**

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	4.3000e-004	0.0152	2.5100e-003	4.0000e-005	7.9000e-004	6.0000e-005	8.4000e-004	2.2000e-004	6.0000e-005	2.7000e-004	0.0000	3.8468	3.8468	1.7000e-004	0.0000	3.8510
Vendor	5.0000e-005	1.4500e-003	2.8000e-004	0.0000	9.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3356	0.3356	2.0000e-005	0.0000	0.3360
Worker	7.6000e-004	5.6000e-004	5.5700e-003	2.0000e-005	1.6200e-003	1.0000e-005	1.6300e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4545	1.4545	4.0000e-005	0.0000	1.4554
Total	**1.2400e-003**	**0.0172**	**8.3600e-003**	**6.0000e-005**	**2.5000e-003**	**8.0000e-005**	**2.5600e-003**	**6.7000e-004**	**8.0000e-005**	**7.4000e-004**	**0.0000**	**5.6369**	**5.6369**	**2.3000e-004**	**0.0000**	**5.6425**

3.2 Grading - 2019

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					0.0870	0.0000	0.0870	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0297	0.1684	2.8000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.9269	24.9269	7.7900e-003	0.0000	25.1217
Total	**3.7100e-003**	**0.0297**	**0.1684**	**2.8000e-004**	**0.0870**	**4.5000e-004**	**0.0874**	**0.0478**	**4.5000e-004**	**0.0483**	**0.0000**	**24.9269**	**24.9269**	**7.7900e-003**	**0.0000**	**25.1217**

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	4.3000e-004	0.0152	2.5100e-003	4.0000e-005	7.9000e-004	6.0000e-005	8.4000e-004	2.2000e-004	6.0000e-005	2.7000e-004	0.0000	3.8468	3.8468	1.7000e-004	0.0000	3.8510
Vendor	5.0000e-005	1.4500e-003	2.8000e-004	0.0000	9.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3356	0.3356	2.0000e-005	0.0000	0.3360
Worker	7.6000e-004	5.6000e-004	5.5700e-003	2.0000e-005	1.6200e-003	1.0000e-005	1.6300e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4545	1.4545	4.0000e-005	0.0000	1.4554
Total	**1.2400e-003**	**0.0172**	**8.3600e-003**	**6.0000e-005**	**2.5000e-003**	**8.0000e-005**	**2.5600e-003**	**6.7000e-004**	**8.0000e-005**	**7.4000e-004**	**0.0000**	**5.6369**	**5.6369**	**2.3000e-004**	**0.0000**	**5.6425**

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	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012
Unmitigated	2.7800e-003	0.0190	0.0312	1.1000e-004	0.4429	1.6000e-004	0.4431	0.0453	1.5000e-004	0.0455	0.0000	9.6891	9.6891	4.8000e-004	0.0000	9.7012

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	19,522	19,522
Total	1.89	22.75	16.74	19,522	19,522

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

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.483219	0.043744	0.205783	0.131644	0.029079	0.006112	0.051218	0.038349	0.001001	0.001999	0.006123	0.000788	0.000940

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2132	5.0000e-005	1.0000e-005	1.2179
Unmitigated	1.2132	5.0000e-005	1.0000e-005	1.2179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

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

SDDER_Levee54

Sutter County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	61
Climate Zone	3			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Parking	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	520.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	HaulingTripNumber	65.00	595.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	2.8370	36.1088	18.0689	0.0622	9.2123	1.3380	10.5504	4.8053	1.2339	6.0392	0.0000	6,335.0476	6,335.0476	0.9714	0.0000	6,359.3316
Maximum	**2.8370**	**36.1088**	**18.0689**	**0.0622**	**9.2123**	**1.3380**	**10.5504**	**4.8053**	**1.2339**	**6.0392**	**0.0000**	**6,335.0476**	**6,335.0476**	**0.9714**	**0.0000**	**6,359.3316**

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					
2019	0.7802	13.5364	18.3610	0.0622	9.2123	0.0942	9.3065	4.8053	0.0919	4.8971	0.0000	6,335.0476	6,335.0476	0.9714	0.0000	6,359.3316
Maximum	**0.7802**	**13.5364**	**18.3610**	**0.0622**	**9.2123**	**0.0942**	**9.3065**	**4.8053**	**0.0919**	**4.8971**	**0.0000**	**6,335.0476**	**6,335.0476**	**0.9714**	**0.0000**	**6,359.3316**

	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	**72.50**	**62.51**	**-1.62**	**0.00**	**0.00**	**92.96**	**11.79**	**0.00**	**92.55**	**18.91**	**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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0664	0.5852	0.6014	2.2400e-003	0.1210	3.2300e-003	0.1242	0.0325	3.0700e-003	0.0356		228.3132	228.3132	0.0167		228.7306
Total	**0.0686**	**0.5852**	**0.6015**	**2.2400e-003**	**0.1210**	**3.2300e-003**	**0.1242**	**0.0325**	**3.0700e-003**	**0.0356**		**228.3134**	**228.3134**	**0.0167**	**0.0000**	**228.7309**

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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0664	0.5852	0.6014	2.2400e-003	0.1210	3.2300e-003	0.1242	0.0325	3.0700e-003	0.0356		228.3132	228.3132	0.0167		228.7306
Total	**0.0686**	**0.5852**	**0.6015**	**2.2400e-003**	**0.1210**	**3.2300e-003**	**0.1242**	**0.0325**	**3.0700e-003**	**0.0356**		**228.3134**	**228.3134**	**0.0167**	**0.0000**	**228.7309**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	595.00	16.80	6.60	30.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					8.2832	0.0000	8.2832	4.5520	0.0000	4.5520			0.0000			0.0000
Off-Road	2.4101	25.3983	15.7446	0.0266		1.2863	1.2863		1.1845	1.1845		2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**2.4101**	**25.3983**	**15.7446**	**0.0266**	**8.2832**	**1.2863**	**9.5695**	**4.5520**	**1.1845**	**5.7365**		**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.3325	10.5186	1.5300	0.0335	0.7442	0.0497	0.7940	0.2041	0.0476	0.2517		3,511.1008	3,511.1008	0.1449		3,514.7224
Vendor	4.7900e-003	0.1288	0.0245	2.8000e-004	6.1300e-003	9.7000e-004	7.1000e-003	1.7700e-003	9.3000e-004	2.6900e-003		29.3838	29.3838	2.6200e-003		29.4492
Worker	0.0895	0.0631	0.7698	1.7900e-003	0.1788	1.0300e-003	0.1799	0.0474	9.5000e-004	0.0484		177.6796	177.6796	6.0000e-003		177.8297
Total	**0.4269**	**10.7105**	**2.3243**	**0.0356**	**0.9292**	**0.0517**	**0.9809**	**0.2533**	**0.0495**	**0.3027**		**3,718.1641**	**3,718.1641**	**0.1535**		**3,722.0013**

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					8.2832	0.0000	8.2832	4.5520	0.0000	4.5520			0.0000			0.0000
Off-Road	0.3533	2.8259	16.0368	0.0266		0.0424	0.0424		0.0424	0.0424	0.0000	2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**0.3533**	**2.8259**	**16.0368**	**0.0266**	**8.2832**	**0.0424**	**8.3256**	**4.5520**	**0.0424**	**4.5944**	**0.0000**	**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.3325	10.5186	1.5300	0.0335	0.7442	0.0497	0.7940	0.2041	0.0476	0.2517		3,511.1008	3,511.1008	0.1449		3,514.7224
Vendor	4.7900e-003	0.1288	0.0245	2.8000e-004	6.1300e-003	9.7000e-004	7.1000e-003	1.7700e-003	9.3000e-004	2.6900e-003		29.3838	29.3838	2.6200e-003		29.4492
Worker	0.0895	0.0631	0.7698	1.7900e-003	0.1788	1.0300e-003	0.1799	0.0474	9.5000e-004	0.0484		177.6796	177.6796	6.0000e-003		177.8297
Total	**0.4269**	**10.7105**	**2.3243**	**0.0356**	**0.9292**	**0.0517**	**0.9809**	**0.2533**	**0.0495**	**0.3027**		**3,718.1641**	**3,718.1641**	**0.1535**		**3,722.0013**

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	0.0664	0.5852	0.6014	2.2400e-003	0.1210	3.2300e-003	0.1242	0.0325	3.0700e-003	0.0356		228.3132	228.3132	0.0167		228.7306
Unmitigated	0.0664	0.5852	0.6014	2.2400e-003	0.1210	3.2300e-003	0.1242	0.0325	3.0700e-003	0.0356		228.3132	228.3132	0.0167		228.7306

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.485545	0.027266	0.165426	0.132085	0.037606	0.007556	0.028141	0.109392	0.000826	0.000363	0.003718	0.001076	0.001000

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
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**

5.2 Energy by Land Use - NaturalGas

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
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

	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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

SDDER_Levee54

Sutter County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	61
Climate Zone	3			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Parking	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	520.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	HaulingTripNumber	65.00	595.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	0.0297	0.3836	0.1892	6.5000e-004	0.0964	0.0141	0.1105	0.0504	0.0130	0.0633	0.0000	59.9305	59.9305	9.3200e-003	0.0000	60.1635
Maximum	**0.0297**	**0.3836**	**0.1892**	**6.5000e-004**	**0.0964**	**0.0141**	**0.1105**	**0.0504**	**0.0130**	**0.0633**	**0.0000**	**59.9305**	**59.9305**	**9.3200e-003**	**0.0000**	**60.1635**

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					
2019	8.1400e-003	0.1466	0.1923	6.5000e-004	0.0964	9.9000e-004	0.0974	0.0504	9.7000e-004	0.0514	0.0000	59.9305	59.9305	9.3200e-003	0.0000	60.1635
Maximum	**8.1400e-003**	**0.1466**	**0.1923**	**6.5000e-004**	**0.0964**	**9.9000e-004**	**0.0974**	**0.0504**	**9.7000e-004**	**0.0514**	**0.0000**	**59.9305**	**59.9305**	**9.3200e-003**	**0.0000**	**60.1635**

	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	**72.62**	**61.79**	**-1.62**	**0.00**	**0.00**	**92.95**	**11.82**	**0.00**	**92.52**	**18.93**	**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	**7-15-2019**	**9-30-2019**	0.4034	0.1483
		Highest	0.4034	0.1483

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	3.1200e-003	0.0335	0.0308	1.2000e-004	6.5300e-003	1.8000e-004	6.7100e-003	1.7600e-003	1.7000e-004	1.9300e-003	0.0000	10.9547	10.9547	8.7000e-004	0.0000	10.9764
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.5300e-003**	**0.0335**	**0.0308**	**1.2000e-004**	**6.5300e-003**	**1.8000e-004**	**6.7100e-003**	**1.7600e-003**	**1.7000e-004**	**1.9300e-003**	**0.0183**	**12.1679**	**12.1862**	**2.0000e-003**	**1.0000e-005**	**12.2396**

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	3.1200e-003	0.0335	0.0308	1.2000e-004	6.5300e-003	1.8000e-004	6.7100e-003	1.7600e-003	1.7000e-004	1.9300e-003	0.0000	10.9547	10.9547	8.7000e-004	0.0000	10.9764
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.5300e-003**	**0.0335**	**0.0308**	**1.2000e-004**	**6.5300e-003**	**1.8000e-004**	**6.7100e-003**	**1.7600e-003**	**1.7000e-004**	**1.9300e-003**	**0.0183**	**12.1679**	**12.1862**	**2.0000e-003**	**1.0000e-005**	**12.2396**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	595.00	16.80	6.60	30.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					0.0870	0.0000	0.0870	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2667	0.1653	2.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	24.9270	24.9270	7.7900e-003	0.0000	25.1217
Total	**0.0253**	**0.2667**	**0.1653**	**2.8000e-004**	**0.0870**	**0.0135**	**0.1005**	**0.0478**	**0.0124**	**0.0602**	**0.0000**	**24.9270**	**24.9270**	**7.7900e-003**	**0.0000**	**25.1217**

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	3.5300e-003	0.1148	0.0168	3.5000e-004	7.5700e-003	5.3000e-004	8.0900e-003	2.0800e-003	5.0000e-004	2.5900e-003	0.0000	33.2018	33.2018	1.4500e-003	0.0000	33.2381
Vendor	5.0000e-005	1.3800e-003	2.8000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2755	0.2755	3.0000e-005	0.0000	0.2761
Worker	8.4000e-004	7.3000e-004	6.7500e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.5263	1.5263	5.0000e-005	0.0000	1.5275
Total	**4.4200e-003**	**0.1169**	**0.0239**	**3.7000e-004**	**9.4400e-003**	**5.5000e-004**	**9.9800e-003**	**2.5800e-003**	**5.2000e-004**	**3.1100e-003**	**0.0000**	**35.0035**	**35.0035**	**1.5300e-003**	**0.0000**	**35.0418**

3.2 Grading - 2019

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					0.0870	0.0000	0.0870	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0297	0.1684	2.8000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.9269	24.9269	7.7900e-003	0.0000	25.1217
Total	**3.7100e-003**	**0.0297**	**0.1684**	**2.8000e-004**	**0.0870**	**4.5000e-004**	**0.0874**	**0.0478**	**4.5000e-004**	**0.0483**	**0.0000**	**24.9269**	**24.9269**	**7.7900e-003**	**0.0000**	**25.1217**

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	3.5300e-003	0.1148	0.0168	3.5000e-004	7.5700e-003	5.3000e-004	8.0900e-003	2.0800e-003	5.0000e-004	2.5900e-003	0.0000	33.2018	33.2018	1.4500e-003	0.0000	33.2381
Vendor	5.0000e-005	1.3800e-003	2.8000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2755	0.2755	3.0000e-005	0.0000	0.2761
Worker	8.4000e-004	7.3000e-004	6.7500e-003	2.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.5263	1.5263	5.0000e-005	0.0000	1.5275
Total	**4.4200e-003**	**0.1169**	**0.0239**	**3.7000e-004**	**9.4400e-003**	**5.5000e-004**	**9.9800e-003**	**2.5800e-003**	**5.2000e-004**	**3.1100e-003**	**0.0000**	**35.0035**	**35.0035**	**1.5300e-003**	**0.0000**	**35.0418**

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	3.1200e-003	0.0335	0.0308	1.2000e-004	6.5300e-003	1.8000e-004	6.7100e-003	1.7600e-003	1.7000e-004	1.9300e-003	0.0000	10.9547	10.9547	8.7000e-004	0.0000	10.9764
Unmitigated	3.1200e-003	0.0335	0.0308	1.2000e-004	6.5300e-003	1.8000e-004	6.7100e-003	1.7600e-003	1.7000e-004	1.9300e-003	0.0000	10.9547	10.9547	8.7000e-004	0.0000	10.9764

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.485545	0.027266	0.165426	0.132085	0.037606	0.007556	0.028141	0.109392	0.000826	0.000363	0.003718	0.001076	0.001000

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2132	5.0000e-005	1.0000e-005	1.2179
Unmitigated	1.2132	5.0000e-005	1.0000e-005	1.2179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

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

SDDER_Levee55

San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
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

SDDER_Levee55 - San Joaquin County, Summer

Project Characteristics - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblAreaCoating	Area_EF_Residential_Interior	150	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	2,482.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	310.00	2,836.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	4.9855	102.4987	29.0333	0.2770	14.3879	1.6668	16.0547	6.2221	1.5484	7.7705	0.0000	28,895.4961	28,895.4961	1.4887	0.0000	28,932.7128
Maximum	**4.9855**	**102.4987**	**29.0333**	**0.2770**	**14.3879**	**1.6668**	**16.0547**	**6.2221**	**1.5484**	**7.7705**	**0.0000**	**28,895.4961**	**28,895.4961**	**1.4887**	**0.0000**	**28,932.7128**

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					
2019	2.9287	79.9262	29.3255	0.2770	14.3879	0.4229	14.8108	6.2221	0.4064	6.6285	0.0000	28,895.4961	28,895.4961	1.4887	0.0000	28,932.7128
Maximum	**2.9287**	**79.9262**	**29.3255**	**0.2770**	**14.3879**	**0.4229**	**14.8108**	**6.2221**	**0.4064**	**6.6285**	**0.0000**	**28,895.4961**	**28,895.4961**	**1.4887**	**0.0000**	**28,932.7128**

	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	**41.26**	**22.02**	**-1.01**	**0.00**	**0.00**	**74.63**	**7.75**	**0.00**	**73.75**	**14.70**	**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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Total	**0.0590**	**0.3068**	**0.5501**	**1.7800e-003**	**0.1195**	**2.0700e-003**	**0.1216**	**0.0320**	**1.9500e-003**	**0.0339**		**180.4384**	**180.4384**	**9.4500e-003**	**0.0000**	**180.6748**

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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Total	**0.0590**	**0.3068**	**0.5501**	**1.7800e-003**	**0.1195**	**2.0700e-003**	**0.1216**	**0.0320**	**1.9500e-003**	**0.0339**		**180.4384**	**180.4384**	**9.4500e-003**	**0.0000**	**180.6748**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	2,836.00	16.80	6.60	50.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					8.2978	0.0000	8.2978	4.5542	0.0000	4.5542			0.0000			0.0000
Off-Road	2.4101	25.3983	15.7446	0.0266		1.2863	1.2863		1.1845	1.1845		2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**2.4101**	**25.3983**	**15.7446**	**0.0266**	**8.2978**	**1.2863**	**9.5841**	**4.5542**	**1.1845**	**5.7387**		**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	2.4793	76.9172	12.5261	0.2482	5.9052	0.3784	6.2836	1.6187	0.3620	1.9807		26,062.1667	26,062.1667	0.6633		26,078.7491
Vendor	4.6300e-003	0.1223	0.0258	2.7000e-004	6.1300e-003	9.0000e-004	7.0300e-003	1.7600e-003	8.6000e-004	2.6300e-003		28.0371	28.0371	1.8800e-003		28.0840
Worker	0.0914	0.0609	0.7368	1.8900e-003	0.1788	1.1700e-003	0.1800	0.0474	1.0700e-003	0.0485		188.4088	188.4088	5.6200e-003		188.5493
Total	**2.5754**	**77.1004**	**13.2887**	**0.2504**	**6.0901**	**0.3805**	**6.4706**	**1.6679**	**0.3640**	**2.0319**		**26,278.6126**	**26,278.6126**	**0.6708**		**26,295.3824**

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					8.2978	0.0000	8.2978	4.5542	0.0000	4.5542			0.0000			0.0000
Off-Road	0.3533	2.8259	16.0368	0.0266		0.0424	0.0424		0.0424	0.0424	0.0000	2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**0.3533**	**2.8259**	**16.0368**	**0.0266**	**8.2978**	**0.0424**	**8.3403**	**4.5542**	**0.0424**	**4.5966**	**0.0000**	**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	2.4793	76.9172	12.5261	0.2482	5.9052	0.3784	6.2836	1.6187	0.3620	1.9807		26,062.1667	26,062.1667	0.6633		26,078.7491
Vendor	4.6300e-003	0.1223	0.0258	2.7000e-004	6.1300e-003	9.0000e-004	7.0300e-003	1.7600e-003	8.6000e-004	2.6300e-003		28.0371	28.0371	1.8800e-003		28.0840
Worker	0.0914	0.0609	0.7368	1.8900e-003	0.1788	1.1700e-003	0.1800	0.0474	1.0700e-003	0.0485		188.4088	188.4088	5.6200e-003		188.5493
Total	**2.5754**	**77.1004**	**13.2887**	**0.2504**	**6.0901**	**0.3805**	**6.4706**	**1.6679**	**0.3640**	**2.0319**		**26,278.6126**	**26,278.6126**	**0.6708**		**26,295.3824**

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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Unmitigated	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996

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
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**

5.2 Energy by Land Use - NaturalGas

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
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

	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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

SDDER_Levee55

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblAreaCoating	Area_EF_Residential_Interior	150	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	2,482.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	310.00	2,836.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	0.0524	1.1059	0.3066	2.9000e-003	0.1494	0.0175	0.1669	0.0649	0.0163	0.0812	0.0000	274.1339	274.1339	0.0144	0.0000	274.4940
Maximum	**0.0524**	**1.1059**	**0.3066**	**2.9000e-003**	**0.1494**	**0.0175**	**0.1669**	**0.0649**	**0.0163**	**0.0812**	**0.0000**	**274.1339**	**274.1339**	**0.0144**	**0.0000**	**274.4940**

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					
2019	0.0309	0.8689	0.3097	2.9000e-003	0.1494	4.4600e-003	0.1538	0.0649	4.2800e-003	0.0692	0.0000	274.1339	274.1339	0.0144	0.0000	274.4940
Maximum	**0.0309**	**0.8689**	**0.3097**	**2.9000e-003**	**0.1494**	**4.4600e-003**	**0.1538**	**0.0649**	**4.2800e-003**	**0.0692**	**0.0000**	**274.1339**	**274.1339**	**0.0144**	**0.0000**	**274.4940**

	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	**41.17**	**21.43**	**-1.00**	**0.00**	**0.00**	**74.54**	**7.83**	**0.00**	**73.69**	**14.77**	**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	**7-15-2019**	**9-30-2019**	1.1132	0.8581
		Highest	1.1132	0.8581

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.0900e-003**	**0.0176**	**0.0289**	**9.0000e-005**	**6.4800e-003**	**1.2000e-004**	**6.6000e-003**	**1.7400e-003**	**1.1000e-004**	**1.8500e-003**	**0.0183**	**9.8317**	**9.8500**	**1.6100e-003**	**1.0000e-005**	**9.8937**

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.0900e-003**	**0.0176**	**0.0289**	**9.0000e-005**	**6.4800e-003**	**1.2000e-004**	**6.6000e-003**	**1.7400e-003**	**1.1000e-004**	**1.8500e-003**	**0.0183**	**9.8317**	**9.8500**	**1.6100e-003**	**1.0000e-005**	**9.8937**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	2,836.00	16.80	6.60	50.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					0.0871	0.0000	0.0871	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2667	0.1653	2.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	24.9270	24.9270	7.7900e-003	0.0000	25.1217
Total	**0.0253**	**0.2667**	**0.1653**	**2.8000e-004**	**0.0871**	**0.0135**	**0.1006**	**0.0478**	**0.0124**	**0.0603**	**0.0000**	**24.9270**	**24.9270**	**7.7900e-003**	**0.0000**	**25.1217**

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	0.0262	0.8372	0.1343	2.6000e-003	0.0604	3.9900e-003	0.0644	0.0166	3.8200e-003	0.0204	0.0000	247.2945	247.2945	6.5500e-003	0.0000	247.4582
Vendor	5.0000e-005	1.3000e-003	2.9000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2634	0.2634	2.0000e-005	0.0000	0.2639
Worker	8.9000e-004	7.1000e-004	6.7400e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	5.0000e-004	0.0000	1.6490	1.6490	5.0000e-005	0.0000	1.6502
Total	**0.0271**	**0.8392**	**0.1413**	**2.6200e-003**	**0.0623**	**4.0100e-003**	**0.0663**	**0.0171**	**3.8400e-003**	**0.0209**	**0.0000**	**249.2069**	**249.2069**	**6.6200e-003**	**0.0000**	**249.3723**

3.2 Grading - 2019

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					0.0871	0.0000	0.0871	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0297	0.1684	2.8000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.9269	24.9269	7.7900e-003	0.0000	25.1217
Total	**3.7100e-003**	**0.0297**	**0.1684**	**2.8000e-004**	**0.0871**	**4.5000e-004**	**0.0876**	**0.0478**	**4.5000e-004**	**0.0483**	**0.0000**	**24.9269**	**24.9269**	**7.7900e-003**	**0.0000**	**25.1217**

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	0.0262	0.8372	0.1343	2.6000e-003	0.0604	3.9900e-003	0.0644	0.0166	3.8200e-003	0.0204	0.0000	247.2945	247.2945	6.5500e-003	0.0000	247.4582
Vendor	5.0000e-005	1.3000e-003	2.9000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2634	0.2634	2.0000e-005	0.0000	0.2639
Worker	8.9000e-004	7.1000e-004	6.7400e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	5.0000e-004	0.0000	1.6490	1.6490	5.0000e-005	0.0000	1.6502
Total	**0.0271**	**0.8392**	**0.1413**	**2.6200e-003**	**0.0623**	**4.0100e-003**	**0.0663**	**0.0171**	**3.8400e-003**	**0.0209**	**0.0000**	**249.2069**	**249.2069**	**6.6200e-003**	**0.0000**	**249.3723**

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	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Unmitigated	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2132	5.0000e-005	1.0000e-005	1.2179
Unmitigated	1.2132	5.0000e-005	1.0000e-005	1.2179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

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

SDDER_Levee62

San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
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

SDDER_Levee62 - San Joaquin County, Summer

Project Characteristics - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust -

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblAreaCoating	Area_EF_Residential_Interior	150	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	2.5062	25.5815	16.5072	0.0288	8.4653	1.2884	9.7537	4.6007	1.1864	5.7872	0.0000	2,833.3294	2,833.3294	0.8254	0.0000	2,853.9637
Maximum	**2.5062**	**25.5815**	**16.5072**	**0.0288**	**8.4653**	**1.2884**	**9.7537**	**4.6007**	**1.1864**	**5.7872**	**0.0000**	**2,833.3294**	**2,833.3294**	**0.8254**	**0.0000**	**2,853.9637**

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					
2019	0.4494	3.0091	16.7994	0.0288	8.4653	0.0445	8.5098	4.6007	0.0444	4.6451	0.0000	2,833.3294	2,833.3294	0.8254	0.0000	2,853.9637
Maximum	**0.4494**	**3.0091**	**16.7994**	**0.0288**	**8.4653**	**0.0445**	**8.5098**	**4.6007**	**0.0444**	**4.6451**	**0.0000**	**2,833.3294**	**2,833.3294**	**0.8254**	**0.0000**	**2,853.9637**

	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	**82.07**	**88.24**	**-1.77**	**0.00**	**0.00**	**96.55**	**12.75**	**0.00**	**96.26**	**19.73**	**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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Total	**0.0590**	**0.3068**	**0.5501**	**1.7800e-003**	**0.1195**	**2.0700e-003**	**0.1216**	**0.0320**	**1.9500e-003**	**0.0339**		**180.4384**	**180.4384**	**9.4500e-003**	**0.0000**	**180.6748**

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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Total	**0.0590**	**0.3068**	**0.5501**	**1.7800e-003**	**0.1195**	**2.0700e-003**	**0.1216**	**0.0320**	**1.9500e-003**	**0.0339**		**180.4384**	**180.4384**	**9.4500e-003**	**0.0000**	**180.6748**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	0.00	16.80	6.60	0.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					8.2804	0.0000	8.2804	4.5516	0.0000	4.5516			0.0000			0.0000
Off-Road	2.4101	25.3983	15.7446	0.0266		1.2863	1.2863		1.1845	1.1845		2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**2.4101**	**25.3983**	**15.7446**	**0.0266**	**8.2804**	**1.2863**	**9.5667**	**4.5516**	**1.1845**	**5.7360**		**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	4.6300e-003	0.1223	0.0258	2.7000e-004	6.1300e-003	9.0000e-004	7.0300e-003	1.7600e-003	8.6000e-004	2.6300e-003		28.0371	28.0371	1.8800e-003		28.0840
Worker	0.0914	0.0609	0.7368	1.8900e-003	0.1788	1.1700e-003	0.1800	0.0474	1.0700e-003	0.0485		188.4088	188.4088	5.6200e-003		188.5493
Total	**0.0961**	**0.1832**	**0.7626**	**2.1600e-003**	**0.1850**	**2.0700e-003**	**0.1870**	**0.0492**	**1.9300e-003**	**0.0511**		**216.4459**	**216.4459**	**7.5000e-003**		**216.6333**

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					8.2804	0.0000	8.2804	4.5516	0.0000	4.5516			0.0000			0.0000
Off-Road	0.3533	2.8259	16.0368	0.0266		0.0424	0.0424		0.0424	0.0424	0.0000	2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**0.3533**	**2.8259**	**16.0368**	**0.0266**	**8.2804**	**0.0424**	**8.3228**	**4.5516**	**0.0424**	**4.5940**	**0.0000**	**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	4.6300e-003	0.1223	0.0258	2.7000e-004	6.1300e-003	9.0000e-004	7.0300e-003	1.7600e-003	8.6000e-004	2.6300e-003		28.0371	28.0371	1.8800e-003		28.0840
Worker	0.0914	0.0609	0.7368	1.8900e-003	0.1788	1.1700e-003	0.1800	0.0474	1.0700e-003	0.0485		188.4088	188.4088	5.6200e-003		188.5493
Total	**0.0961**	**0.1832**	**0.7626**	**2.1600e-003**	**0.1850**	**2.0700e-003**	**0.1870**	**0.0492**	**1.9300e-003**	**0.0511**		**216.4459**	**216.4459**	**7.5000e-003**		**216.6333**

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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Unmitigated	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996

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
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**

5.2 Energy by Land Use - NaturalGas

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
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

	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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

SDDER_Levee62

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust -

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblAreaCoating	Area_EF_Residential_Interior	150	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	0.0263	0.2687	0.1724	3.0000e-004	0.0888	0.0135	0.1024	0.0483	0.0125	0.0608	0.0000	26.8394	26.8394	7.8600e-003	0.0000	27.0358
Maximum	**0.0263**	**0.2687**	**0.1724**	**3.0000e-004**	**0.0888**	**0.0135**	**0.1024**	**0.0483**	**0.0125**	**0.0608**	**0.0000**	**26.8394**	**26.8394**	**7.8600e-003**	**0.0000**	**27.0358**

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					
2019	4.6500e-003	0.0317	0.1754	3.0000e-004	0.0888	4.7000e-004	0.0893	0.0483	4.7000e-004	0.0488	0.0000	26.8393	26.8393	7.8600e-003	0.0000	27.0358
Maximum	**4.6500e-003**	**0.0317**	**0.1754**	**3.0000e-004**	**0.0888**	**4.7000e-004**	**0.0893**	**0.0483**	**4.7000e-004**	**0.0488**	**0.0000**	**26.8393**	**26.8393**	**7.8600e-003**	**0.0000**	**27.0358**

	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	**82.29**	**88.21**	**-1.78**	**0.00**	**0.00**	**96.53**	**12.77**	**0.00**	**96.23**	**19.74**	**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	**7-15-2019**	**9-30-2019**	0.2909	0.0358
		Highest	0.2909	0.0358

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.0900e-003**	**0.0176**	**0.0289**	**9.0000e-005**	**6.4800e-003**	**1.2000e-004**	**6.6000e-003**	**1.7400e-003**	**1.1000e-004**	**1.8500e-003**	**0.0183**	**9.8317**	**9.8500**	**1.6100e-003**	**1.0000e-005**	**9.8937**

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.0900e-003**	**0.0176**	**0.0289**	**9.0000e-005**	**6.4800e-003**	**1.2000e-004**	**6.6000e-003**	**1.7400e-003**	**1.1000e-004**	**1.8500e-003**	**0.0183**	**9.8317**	**9.8500**	**1.6100e-003**	**1.0000e-005**	**9.8937**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	0.00	16.80	6.60	0.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					0.0869	0.0000	0.0869	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2667	0.1653	2.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	24.9270	24.9270	7.7900e-003	0.0000	25.1217
Total	**0.0253**	**0.2667**	**0.1653**	**2.8000e-004**	**0.0869**	**0.0135**	**0.1005**	**0.0478**	**0.0124**	**0.0602**	**0.0000**	**24.9270**	**24.9270**	**7.7900e-003**	**0.0000**	**25.1217**

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	5.0000e-005	1.3000e-003	2.9000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2634	0.2634	2.0000e-005	0.0000	0.2639
Worker	8.9000e-004	7.1000e-004	6.7400e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	5.0000e-004	0.0000	1.6490	1.6490	5.0000e-005	0.0000	1.6502
Total	**9.4000e-004**	**2.0100e-003**	**7.0300e-003**	**2.0000e-005**	**1.8800e-003**	**2.0000e-005**	**1.9000e-003**	**5.0000e-004**	**2.0000e-005**	**5.3000e-004**	**0.0000**	**1.9124**	**1.9124**	**7.0000e-005**	**0.0000**	**1.9141**

3.2 Grading - 2019

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					0.0869	0.0000	0.0869	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0297	0.1684	2.8000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.9269	24.9269	7.7900e-003	0.0000	25.1217
Total	**3.7100e-003**	**0.0297**	**0.1684**	**2.8000e-004**	**0.0869**	**4.5000e-004**	**0.0874**	**0.0478**	**4.5000e-004**	**0.0482**	**0.0000**	**24.9269**	**24.9269**	**7.7900e-003**	**0.0000**	**25.1217**

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	5.0000e-005	1.3000e-003	2.9000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2634	0.2634	2.0000e-005	0.0000	0.2639
Worker	8.9000e-004	7.1000e-004	6.7400e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	5.0000e-004	0.0000	1.6490	1.6490	5.0000e-005	0.0000	1.6502
Total	**9.4000e-004**	**2.0100e-003**	**7.0300e-003**	**2.0000e-005**	**1.8800e-003**	**2.0000e-005**	**1.9000e-003**	**5.0000e-004**	**2.0000e-005**	**5.3000e-004**	**0.0000**	**1.9124**	**1.9124**	**7.0000e-005**	**0.0000**	**1.9141**

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	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Unmitigated	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2132	5.0000e-005	1.0000e-005	1.2179
Unmitigated	1.2132	5.0000e-005	1.0000e-005	1.2179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

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

SDDER_Levee69

San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
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

SDDER_Levee69 - San Joaquin County, Summer

Project Characteristics - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblAreaCoating	Area_EF_Residential_Interior	150	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	2,297.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	287.00	2,626.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	4.8019	96.8031	28.1058	0.2586	13.9494	1.6388	15.5881	6.1020	1.5216	7.6237	0.0000	26,965.6460	26,965.6460	1.4396	0.0000	27,001.6347
Maximum	**4.8019**	**96.8031**	**28.1058**	**0.2586**	**13.9494**	**1.6388**	**15.5881**	**6.1020**	**1.5216**	**7.6237**	**0.0000**	**26,965.6460**	**26,965.6460**	**1.4396**	**0.0000**	**27,001.6347**

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					
2019	2.7451	74.2307	28.3980	0.2586	13.9494	0.3949	14.3443	6.1020	0.3796	6.4816	0.0000	26,965.6460	26,965.6460	1.4396	0.0000	27,001.6347
Maximum	**2.7451**	**74.2307**	**28.3980**	**0.2586**	**13.9494**	**0.3949**	**14.3443**	**6.1020**	**0.3796**	**6.4816**	**0.0000**	**26,965.6460**	**26,965.6460**	**1.4396**	**0.0000**	**27,001.6347**

	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	**42.83**	**23.32**	**-1.04**	**0.00**	**0.00**	**75.90**	**7.98**	**0.00**	**75.05**	**14.98**	**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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Total	**0.0590**	**0.3068**	**0.5501**	**1.7800e-003**	**0.1195**	**2.0700e-003**	**0.1216**	**0.0320**	**1.9500e-003**	**0.0339**		**180.4384**	**180.4384**	**9.4500e-003**	**0.0000**	**180.6748**

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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Total	**0.0590**	**0.3068**	**0.5501**	**1.7800e-003**	**0.1195**	**2.0700e-003**	**0.1216**	**0.0320**	**1.9500e-003**	**0.0339**		**180.4384**	**180.4384**	**9.4500e-003**	**0.0000**	**180.6748**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	2,626.00	16.80	6.60	50.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					8.2965	0.0000	8.2965	4.5540	0.0000	4.5540			0.0000			0.0000
Off-Road	2.4101	25.3983	15.7446	0.0266		1.2863	1.2863		1.1845	1.1845		2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**2.4101**	**25.3983**	**15.7446**	**0.0266**	**8.2965**	**1.2863**	**9.5828**	**4.5540**	**1.1845**	**5.7385**		**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	2.2957	71.2216	11.5986	0.2298	5.4679	0.3504	5.8183	1.4988	0.3352	1.8341		24,132.3166	24,132.3166	0.6142		24,147.6710
Vendor	4.6300e-003	0.1223	0.0258	2.7000e-004	6.1300e-003	9.0000e-004	7.0300e-003	1.7600e-003	8.6000e-004	2.6300e-003		28.0371	28.0371	1.8800e-003		28.0840
Worker	0.0914	0.0609	0.7368	1.8900e-003	0.1788	1.1700e-003	0.1800	0.0474	1.0700e-003	0.0485		188.4088	188.4088	5.6200e-003		188.5493
Total	**2.3918**	**71.4048**	**12.3612**	**0.2320**	**5.6529**	**0.3525**	**6.0053**	**1.5480**	**0.3372**	**1.8852**		**24,348.7625**	**24,348.7625**	**0.6217**		**24,364.3043**

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					8.2965	0.0000	8.2965	4.5540	0.0000	4.5540			0.0000			0.0000
Off-Road	0.3533	2.8259	16.0368	0.0266		0.0424	0.0424		0.0424	0.0424	0.0000	2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**0.3533**	**2.8259**	**16.0368**	**0.0266**	**8.2965**	**0.0424**	**8.3390**	**4.5540**	**0.0424**	**4.5965**	**0.0000**	**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	2.2957	71.2216	11.5986	0.2298	5.4679	0.3504	5.8183	1.4988	0.3352	1.8341		24,132.3166	24,132.3166	0.6142		24,147.6710
Vendor	4.6300e-003	0.1223	0.0258	2.7000e-004	6.1300e-003	9.0000e-004	7.0300e-003	1.7600e-003	8.6000e-004	2.6300e-003		28.0371	28.0371	1.8800e-003		28.0840
Worker	0.0914	0.0609	0.7368	1.8900e-003	0.1788	1.1700e-003	0.1800	0.0474	1.0700e-003	0.0485		188.4088	188.4088	5.6200e-003		188.5493
Total	**2.3918**	**71.4048**	**12.3612**	**0.2320**	**5.6529**	**0.3525**	**6.0053**	**1.5480**	**0.3372**	**1.8852**		**24,348.7625**	**24,348.7625**	**0.6217**		**24,364.3043**

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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Unmitigated	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996

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
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**

5.2 Energy by Land Use - NaturalGas

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
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

	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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

SDDER_Levee69

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblAreaCoating	Area_EF_Residential_Interior	150	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	2,297.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	287.00	2,626.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	0.0505	1.0439	0.2967	2.7000e-003	0.1449	0.0172	0.1621	0.0637	0.0160	0.0797	0.0000	255.8222	255.8222	0.0139	0.0000	256.1703
Maximum	**0.0505**	**1.0439**	**0.2967**	**2.7000e-003**	**0.1449**	**0.0172**	**0.1621**	**0.0637**	**0.0160**	**0.0797**	**0.0000**	**255.8222**	**255.8222**	**0.0139**	**0.0000**	**256.1703**

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					
2019	0.0289	0.8069	0.2997	2.7000e-003	0.1449	4.1600e-003	0.1491	0.0637	4.0000e-003	0.0677	0.0000	255.8222	255.8222	0.0139	0.0000	256.1702
Maximum	**0.0289**	**0.8069**	**0.2997**	**2.7000e-003**	**0.1449**	**4.1600e-003**	**0.1491**	**0.0637**	**4.0000e-003**	**0.0677**	**0.0000**	**255.8222**	**255.8222**	**0.0139**	**0.0000**	**256.1702**

	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	**42.75**	**22.70**	**-1.03**	**0.00**	**0.00**	**75.84**	**8.06**	**0.00**	**74.98**	**15.06**	**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	**7-15-2019**	**9-30-2019**	1.0523	0.7972
		Highest	1.0523	0.7972

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.0900e-003**	**0.0176**	**0.0289**	**9.0000e-005**	**6.4800e-003**	**1.2000e-004**	**6.6000e-003**	**1.7400e-003**	**1.1000e-004**	**1.8500e-003**	**0.0183**	**9.8317**	**9.8500**	**1.6100e-003**	**1.0000e-005**	**9.8937**

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.0900e-003**	**0.0176**	**0.0289**	**9.0000e-005**	**6.4800e-003**	**1.2000e-004**	**6.6000e-003**	**1.7400e-003**	**1.1000e-004**	**1.8500e-003**	**0.0183**	**9.8317**	**9.8500**	**1.6100e-003**	**1.0000e-005**	**9.8937**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	2,626.00	16.80	6.60	50.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					0.0871	0.0000	0.0871	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2667	0.1653	2.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	24.9270	24.9270	7.7900e-003	0.0000	25.1217
Total	**0.0253**	**0.2667**	**0.1653**	**2.8000e-004**	**0.0871**	**0.0135**	**0.1006**	**0.0478**	**0.0124**	**0.0603**	**0.0000**	**24.9270**	**24.9270**	**7.7900e-003**	**0.0000**	**25.1217**

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	0.0243	0.7752	0.1243	2.4000e-003	0.0559	3.6900e-003	0.0596	0.0154	3.5300e-003	0.0189	0.0000	228.9829	228.9829	6.0600e-003	0.0000	229.1345
Vendor	5.0000e-005	1.3000e-003	2.9000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2634	0.2634	2.0000e-005	0.0000	0.2639
Worker	8.9000e-004	7.1000e-004	6.7400e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	5.0000e-004	0.0000	1.6490	1.6490	5.0000e-005	0.0000	1.6502
Total	**0.0252**	**0.7773**	**0.1314**	**2.4200e-003**	**0.0578**	**3.7100e-003**	**0.0615**	**0.0159**	**3.5500e-003**	**0.0194**	**0.0000**	**230.8953**	**230.8953**	**6.1300e-003**	**0.0000**	**231.0485**

3.2 Grading - 2019

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					0.0871	0.0000	0.0871	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0297	0.1684	2.8000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.9269	24.9269	7.7900e-003	0.0000	25.1217
Total	**3.7100e-003**	**0.0297**	**0.1684**	**2.8000e-004**	**0.0871**	**4.5000e-004**	**0.0876**	**0.0478**	**4.5000e-004**	**0.0483**	**0.0000**	**24.9269**	**24.9269**	**7.7900e-003**	**0.0000**	**25.1217**

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	0.0243	0.7752	0.1243	2.4000e-003	0.0559	3.6900e-003	0.0596	0.0154	3.5300e-003	0.0189	0.0000	228.9829	228.9829	6.0600e-003	0.0000	229.1345
Vendor	5.0000e-005	1.3000e-003	2.9000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2634	0.2634	2.0000e-005	0.0000	0.2639
Worker	8.9000e-004	7.1000e-004	6.7400e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	5.0000e-004	0.0000	1.6490	1.6490	5.0000e-005	0.0000	1.6502
Total	**0.0252**	**0.7773**	**0.1314**	**2.4200e-003**	**0.0578**	**3.7100e-003**	**0.0615**	**0.0159**	**3.5500e-003**	**0.0194**	**0.0000**	**230.8953**	**230.8953**	**6.1300e-003**	**0.0000**	**231.0485**

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	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Unmitigated	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2132	5.0000e-005	1.0000e-005	1.2179
Unmitigated	1.2132	5.0000e-005	1.0000e-005	1.2179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

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

SDDER_Levee70

San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
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

SDDER_Levee70 - San Joaquin County, Summer

Project Characteristics - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblAreaCoating	Area_EF_Residential_Interior	150	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	144.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	18.00	165.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	2.6504	30.0566	17.2360	0.0432	8.8099	1.3104	10.1203	4.6951	1.2075	5.9026	0.0000	4,349.6402	4,349.6402	0.8640	0.0000	4,371.2393
Maximum	**2.6504**	**30.0566**	**17.2360**	**0.0432**	**8.8099**	**1.3104**	**10.1203**	**4.6951**	**1.2075**	**5.9026**	**0.0000**	**4,349.6402**	**4,349.6402**	**0.8640**	**0.0000**	**4,371.2393**

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					
2019	0.5936	7.4842	17.5282	0.0432	8.8099	0.0665	8.8764	4.6951	0.0654	4.7605	0.0000	4,349.6402	4,349.6402	0.8640	0.0000	4,371.2393
Maximum	**0.5936**	**7.4842**	**17.5282**	**0.0432**	**8.8099**	**0.0665**	**8.8764**	**4.6951**	**0.0654**	**4.7605**	**0.0000**	**4,349.6402**	**4,349.6402**	**0.8640**	**0.0000**	**4,371.2393**

	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	**77.60**	**75.10**	**-1.70**	**0.00**	**0.00**	**94.92**	**12.29**	**0.00**	**94.58**	**19.35**	**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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Total	**0.0590**	**0.3068**	**0.5501**	**1.7800e-003**	**0.1195**	**2.0700e-003**	**0.1216**	**0.0320**	**1.9500e-003**	**0.0339**		**180.4384**	**180.4384**	**9.4500e-003**	**0.0000**	**180.6748**

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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Total	**0.0590**	**0.3068**	**0.5501**	**1.7800e-003**	**0.1195**	**2.0700e-003**	**0.1216**	**0.0320**	**1.9500e-003**	**0.0339**		**180.4384**	**180.4384**	**9.4500e-003**	**0.0000**	**180.6748**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	165.00	16.80	6.60	50.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					8.2814	0.0000	8.2814	4.5517	0.0000	4.5517			0.0000			0.0000
Off-Road	2.4101	25.3983	15.7446	0.0266		1.2863	1.2863		1.1845	1.1845		2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**2.4101**	**25.3983**	**15.7446**	**0.0266**	**8.2814**	**1.2863**	**9.5677**	**4.5517**	**1.1845**	**5.7362**		**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.1443	4.4751	0.7288	0.0144	0.3436	0.0220	0.3656	0.0942	0.0211	0.1152		1,516.3108	1,516.3108	0.0386		1,517.2756
Vendor	4.6300e-003	0.1223	0.0258	2.7000e-004	6.1300e-003	9.0000e-004	7.0300e-003	1.7600e-003	8.6000e-004	2.6300e-003		28.0371	28.0371	1.8800e-003		28.0840
Worker	0.0914	0.0609	0.7368	1.8900e-003	0.1788	1.1700e-003	0.1800	0.0474	1.0700e-003	0.0485		188.4088	188.4088	5.6200e-003		188.5493
Total	**0.2403**	**4.6583**	**1.4914**	**0.0166**	**0.5285**	**0.0241**	**0.5526**	**0.1434**	**0.0230**	**0.1664**		**1,732.7567**	**1,732.7567**	**0.0461**		**1,733.9089**

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					8.2814	0.0000	8.2814	4.5517	0.0000	4.5517			0.0000			0.0000
Off-Road	0.3533	2.8259	16.0368	0.0266		0.0424	0.0424		0.0424	0.0424	0.0000	2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**0.3533**	**2.8259**	**16.0368**	**0.0266**	**8.2814**	**0.0424**	**8.3238**	**4.5517**	**0.0424**	**4.5942**	**0.0000**	**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.1443	4.4751	0.7288	0.0144	0.3436	0.0220	0.3656	0.0942	0.0211	0.1152		1,516.3108	1,516.3108	0.0386		1,517.2756
Vendor	4.6300e-003	0.1223	0.0258	2.7000e-004	6.1300e-003	9.0000e-004	7.0300e-003	1.7600e-003	8.6000e-004	2.6300e-003		28.0371	28.0371	1.8800e-003		28.0840
Worker	0.0914	0.0609	0.7368	1.8900e-003	0.1788	1.1700e-003	0.1800	0.0474	1.0700e-003	0.0485		188.4088	188.4088	5.6200e-003		188.5493
Total	**0.2403**	**4.6583**	**1.4914**	**0.0166**	**0.5285**	**0.0241**	**0.5526**	**0.1434**	**0.0230**	**0.1664**		**1,732.7567**	**1,732.7567**	**0.0461**		**1,733.9089**

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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Unmitigated	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996

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
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**

5.2 Energy by Land Use - NaturalGas

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
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

	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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

SDDER_Levee70

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

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tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	18.00	165.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	0.0278	0.3174	0.1802	4.5000e-004	0.0924	0.0138	0.1061	0.0493	0.0127	0.0619	0.0000	41.2271	41.2271	8.2400e-003	0.0000	41.4331
Maximum	**0.0278**	**0.3174**	**0.1802**	**4.5000e-004**	**0.0924**	**0.0138**	**0.1061**	**0.0493**	**0.0127**	**0.0619**	**0.0000**	**41.2271**	**41.2271**	**8.2400e-003**	**0.0000**	**41.4331**

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					
2019	6.1800e-003	0.0804	0.1832	4.5000e-004	0.0924	7.0000e-004	0.0931	0.0493	6.9000e-004	0.0500	0.0000	41.2271	41.2271	8.2400e-003	0.0000	41.4330
Maximum	**6.1800e-003**	**0.0804**	**0.1832**	**4.5000e-004**	**0.0924**	**7.0000e-004**	**0.0931**	**0.0493**	**6.9000e-004**	**0.0500**	**0.0000**	**41.2271**	**41.2271**	**8.2400e-003**	**0.0000**	**41.4330**

	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	**77.75**	**74.67**	**-1.70**	**0.00**	**0.00**	**94.91**	**12.31**	**0.00**	**94.56**	**19.36**	**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	**7-15-2019**	**9-30-2019**	0.3388	0.0837
		Highest	0.3388	0.0837

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.0900e-003**	**0.0176**	**0.0289**	**9.0000e-005**	**6.4800e-003**	**1.2000e-004**	**6.6000e-003**	**1.7400e-003**	**1.1000e-004**	**1.8500e-003**	**0.0183**	**9.8317**	**9.8500**	**1.6100e-003**	**1.0000e-005**	**9.8937**

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.0900e-003**	**0.0176**	**0.0289**	**9.0000e-005**	**6.4800e-003**	**1.2000e-004**	**6.6000e-003**	**1.7400e-003**	**1.1000e-004**	**1.8500e-003**	**0.0183**	**9.8317**	**9.8500**	**1.6100e-003**	**1.0000e-005**	**9.8937**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	165.00	16.80	6.60	50.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					0.0870	0.0000	0.0870	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2667	0.1653	2.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	24.9270	24.9270	7.7900e-003	0.0000	25.1217
Total	**0.0253**	**0.2667**	**0.1653**	**2.8000e-004**	**0.0870**	**0.0135**	**0.1005**	**0.0478**	**0.0124**	**0.0602**	**0.0000**	**24.9270**	**24.9270**	**7.7900e-003**	**0.0000**	**25.1217**

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	1.5200e-003	0.0487	7.8100e-003	1.5000e-004	3.5100e-003	2.3000e-004	3.7400e-003	9.7000e-004	2.2000e-004	1.1900e-003	0.0000	14.3877	14.3877	3.8000e-004	0.0000	14.3973
Vendor	5.0000e-005	1.3000e-003	2.9000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2634	0.2634	2.0000e-005	0.0000	0.2639
Worker	8.9000e-004	7.1000e-004	6.7400e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	5.0000e-004	0.0000	1.6490	1.6490	5.0000e-005	0.0000	1.6502
Total	**2.4600e-003**	**0.0507**	**0.0148**	**1.7000e-004**	**5.3900e-003**	**2.5000e-004**	**5.6400e-003**	**1.4700e-003**	**2.4000e-004**	**1.7200e-003**	**0.0000**	**16.3001**	**16.3001**	**4.5000e-004**	**0.0000**	**16.3113**

3.2 Grading - 2019

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					0.0870	0.0000	0.0870	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0297	0.1684	2.8000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.9269	24.9269	7.7900e-003	0.0000	25.1217
Total	**3.7100e-003**	**0.0297**	**0.1684**	**2.8000e-004**	**0.0870**	**4.5000e-004**	**0.0874**	**0.0478**	**4.5000e-004**	**0.0482**	**0.0000**	**24.9269**	**24.9269**	**7.7900e-003**	**0.0000**	**25.1217**

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	1.5200e-003	0.0487	7.8100e-003	1.5000e-004	3.5100e-003	2.3000e-004	3.7400e-003	9.7000e-004	2.2000e-004	1.1900e-003	0.0000	14.3877	14.3877	3.8000e-004	0.0000	14.3973
Vendor	5.0000e-005	1.3000e-003	2.9000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2634	0.2634	2.0000e-005	0.0000	0.2639
Worker	8.9000e-004	7.1000e-004	6.7400e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	5.0000e-004	0.0000	1.6490	1.6490	5.0000e-005	0.0000	1.6502
Total	**2.4600e-003**	**0.0507**	**0.0148**	**1.7000e-004**	**5.3900e-003**	**2.5000e-004**	**5.6400e-003**	**1.4700e-003**	**2.4000e-004**	**1.7200e-003**	**0.0000**	**16.3001**	**16.3001**	**4.5000e-004**	**0.0000**	**16.3113**

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	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Unmitigated	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2132	5.0000e-005	1.0000e-005	1.2179
Unmitigated	1.2132	5.0000e-005	1.0000e-005	1.2179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

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

SDDER_Levee71

San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblAreaCoating	Area_EF_Residential_Interior	150	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	448.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	56.00	512.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	2.9538	39.4678	18.7686	0.0736	9.5346	1.3567	10.8913	4.8935	1.2518	6.1452	0.0000	7,538.4878	7,538.4878	0.9451	0.0000	7,562.1159
Maximum	**2.9538**	**39.4678**	**18.7686**	**0.0736**	**9.5346**	**1.3567**	**10.8913**	**4.8935**	**1.2518**	**6.1452**	**0.0000**	**7,538.4878**	**7,538.4878**	**0.9451**	**0.0000**	**7,562.1159**

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					
2019	0.8970	16.8954	19.0608	0.0736	9.5346	0.1128	9.6474	4.8935	0.1097	5.0032	0.0000	7,538.4878	7,538.4878	0.9451	0.0000	7,562.1159
Maximum	**0.8970**	**16.8954**	**19.0608**	**0.0736**	**9.5346**	**0.1128**	**9.6474**	**4.8935**	**0.1097**	**5.0032**	**0.0000**	**7,538.4878**	**7,538.4878**	**0.9451**	**0.0000**	**7,562.1159**

	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	**69.63**	**57.19**	**-1.56**	**0.00**	**0.00**	**91.68**	**11.42**	**0.00**	**91.23**	**18.58**	**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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Total	**0.0590**	**0.3068**	**0.5501**	**1.7800e-003**	**0.1195**	**2.0700e-003**	**0.1216**	**0.0320**	**1.9500e-003**	**0.0339**		**180.4384**	**180.4384**	**9.4500e-003**	**0.0000**	**180.6748**

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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Total	**0.0590**	**0.3068**	**0.5501**	**1.7800e-003**	**0.1195**	**2.0700e-003**	**0.1216**	**0.0320**	**1.9500e-003**	**0.0339**		**180.4384**	**180.4384**	**9.4500e-003**	**0.0000**	**180.6748**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	512.00	16.80	6.60	50.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					8.2835	0.0000	8.2835	4.5520	0.0000	4.5520			0.0000			0.0000
Off-Road	2.4101	25.3983	15.7446	0.0266		1.2863	1.2863		1.1845	1.1845		2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**2.4101**	**25.3983**	**15.7446**	**0.0266**	**8.2835**	**1.2863**	**9.5698**	**4.5520**	**1.1845**	**5.7365**		**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.4476	13.8863	2.2614	0.0448	1.0661	0.0683	1.1344	0.2922	0.0654	0.3576		4,705.1585	4,705.1585	0.1198		4,708.1522
Vendor	4.6300e-003	0.1223	0.0258	2.7000e-004	6.1300e-003	9.0000e-004	7.0300e-003	1.7600e-003	8.6000e-004	2.6300e-003		28.0371	28.0371	1.8800e-003		28.0840
Worker	0.0914	0.0609	0.7368	1.8900e-003	0.1788	1.1700e-003	0.1800	0.0474	1.0700e-003	0.0485		188.4088	188.4088	5.6200e-003		188.5493
Total	**0.5437**	**14.0695**	**3.0240**	**0.0470**	**1.2511**	**0.0704**	**1.3214**	**0.3414**	**0.0673**	**0.4087**		**4,921.6043**	**4,921.6043**	**0.1273**		**4,924.7855**

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					8.2835	0.0000	8.2835	4.5520	0.0000	4.5520			0.0000			0.0000
Off-Road	0.3533	2.8259	16.0368	0.0266		0.0424	0.0424		0.0424	0.0424	0.0000	2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**0.3533**	**2.8259**	**16.0368**	**0.0266**	**8.2835**	**0.0424**	**8.3260**	**4.5520**	**0.0424**	**4.5945**	**0.0000**	**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.4476	13.8863	2.2614	0.0448	1.0661	0.0683	1.1344	0.2922	0.0654	0.3576		4,705.1585	4,705.1585	0.1198		4,708.1522
Vendor	4.6300e-003	0.1223	0.0258	2.7000e-004	6.1300e-003	9.0000e-004	7.0300e-003	1.7600e-003	8.6000e-004	2.6300e-003		28.0371	28.0371	1.8800e-003		28.0840
Worker	0.0914	0.0609	0.7368	1.8900e-003	0.1788	1.1700e-003	0.1800	0.0474	1.0700e-003	0.0485		188.4088	188.4088	5.6200e-003		188.5493
Total	**0.5437**	**14.0695**	**3.0240**	**0.0470**	**1.2511**	**0.0704**	**1.3214**	**0.3414**	**0.0673**	**0.4087**		**4,921.6043**	**4,921.6043**	**0.1273**		**4,924.7855**

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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Unmitigated	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996

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
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**

5.2 Energy by Land Use - NaturalGas

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
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

	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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

SDDER_Levee71

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblAreaCoating	Area_EF_Residential_Interior	150	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	448.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	56.00	512.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	0.0310	0.4198	0.1966	7.7000e-004	0.0998	0.0143	0.1140	0.0513	0.0132	0.0644	0.0000	71.4849	71.4849	9.0400e-003	0.0000	71.7109
Maximum	**0.0310**	**0.4198**	**0.1966**	**7.7000e-004**	**0.0998**	**0.0143**	**0.1140**	**0.0513**	**0.0132**	**0.0644**	**0.0000**	**71.4849**	**71.4849**	**9.0400e-003**	**0.0000**	**71.7109**

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					
2019	9.3800e-003	0.1828	0.1997	7.7000e-004	0.0998	1.1900e-003	0.1010	0.0513	1.1500e-003	0.0525	0.0000	71.4849	71.4849	9.0400e-003	0.0000	71.7109
Maximum	**9.3800e-003**	**0.1828**	**0.1997**	**7.7000e-004**	**0.0998**	**1.1900e-003**	**0.1010**	**0.0513**	**1.1500e-003**	**0.0525**	**0.0000**	**71.4849**	**71.4849**	**9.0400e-003**	**0.0000**	**71.7109**

	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	**69.72**	**56.45**	**-1.56**	**0.00**	**0.00**	**91.65**	**11.46**	**0.00**	**91.25**	**18.61**	**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	**7-15-2019**	**9-30-2019**	0.4394	0.1843
		Highest	0.4394	0.1843

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.0900e-003**	**0.0176**	**0.0289**	**9.0000e-005**	**6.4800e-003**	**1.2000e-004**	**6.6000e-003**	**1.7400e-003**	**1.1000e-004**	**1.8500e-003**	**0.0183**	**9.8317**	**9.8500**	**1.6100e-003**	**1.0000e-005**	**9.8937**

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.0900e-003**	**0.0176**	**0.0289**	**9.0000e-005**	**6.4800e-003**	**1.2000e-004**	**6.6000e-003**	**1.7400e-003**	**1.1000e-004**	**1.8500e-003**	**0.0183**	**9.8317**	**9.8500**	**1.6100e-003**	**1.0000e-005**	**9.8937**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	512.00	16.80	6.60	50.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					0.0870	0.0000	0.0870	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2667	0.1653	2.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	24.9270	24.9270	7.7900e-003	0.0000	25.1217
Total	**0.0253**	**0.2667**	**0.1653**	**2.8000e-004**	**0.0870**	**0.0135**	**0.1005**	**0.0478**	**0.0124**	**0.0602**	**0.0000**	**24.9270**	**24.9270**	**7.7900e-003**	**0.0000**	**25.1217**

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	4.7300e-003	0.1512	0.0242	4.7000e-004	0.0109	7.2000e-004	0.0116	3.0000e-003	6.9000e-004	3.6800e-003	0.0000	44.6456	44.6456	1.1800e-003	0.0000	44.6751
Vendor	5.0000e-005	1.3000e-003	2.9000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2634	0.2634	2.0000e-005	0.0000	0.2639
Worker	8.9000e-004	7.1000e-004	6.7400e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	5.0000e-004	0.0000	1.6490	1.6490	5.0000e-005	0.0000	1.6502
Total	**5.6700e-003**	**0.1532**	**0.0313**	**4.9000e-004**	**0.0128**	**7.4000e-004**	**0.0135**	**3.5000e-003**	**7.1000e-004**	**4.2100e-003**	**0.0000**	**46.5580**	**46.5580**	**1.2500e-003**	**0.0000**	**46.5892**

3.2 Grading - 2019

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					0.0870	0.0000	0.0870	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0297	0.1684	2.8000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.9269	24.9269	7.7900e-003	0.0000	25.1217
Total	**3.7100e-003**	**0.0297**	**0.1684**	**2.8000e-004**	**0.0870**	**4.5000e-004**	**0.0874**	**0.0478**	**4.5000e-004**	**0.0483**	**0.0000**	**24.9269**	**24.9269**	**7.7900e-003**	**0.0000**	**25.1217**

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	4.7300e-003	0.1512	0.0242	4.7000e-004	0.0109	7.2000e-004	0.0116	3.0000e-003	6.9000e-004	3.6800e-003	0.0000	44.6456	44.6456	1.1800e-003	0.0000	44.6751
Vendor	5.0000e-005	1.3000e-003	2.9000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2634	0.2634	2.0000e-005	0.0000	0.2639
Worker	8.9000e-004	7.1000e-004	6.7400e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	5.0000e-004	0.0000	1.6490	1.6490	5.0000e-005	0.0000	1.6502
Total	**5.6700e-003**	**0.1532**	**0.0313**	**4.9000e-004**	**0.0128**	**7.4000e-004**	**0.0135**	**3.5000e-003**	**7.1000e-004**	**4.2100e-003**	**0.0000**	**46.5580**	**46.5580**	**1.2500e-003**	**0.0000**	**46.5892**

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	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Unmitigated	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2132	5.0000e-005	1.0000e-005	1.2179
Unmitigated	1.2132	5.0000e-005	1.0000e-005	1.2179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

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

SDDER_Levee72

San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblAreaCoating	Area_EF_Residential_Interior	150	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	868.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	109.00	992.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	3.3734	52.4863	20.8887	0.1156	10.5370	1.4207	11.9577	5.1679	1.3130	6.4809	0.0000	11,949.5739	11,949.5739	1.0574	0.0000	11,976.0085
Maximum	**3.3734**	**52.4863**	**20.8887**	**0.1156**	**10.5370**	**1.4207**	**11.9577**	**5.1679**	**1.3130**	**6.4809**	**0.0000**	**11,949.5739**	**11,949.5739**	**1.0574**	**0.0000**	**11,976.0085**

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					
2019	1.3166	29.9138	21.1809	0.1156	10.5370	0.1769	10.7139	5.1679	0.1710	5.3389	0.0000	11,949.5739	11,949.5739	1.0574	0.0000	11,976.0085
Maximum	**1.3166**	**29.9138**	**21.1809**	**0.1156**	**10.5370**	**0.1769**	**10.7139**	**5.1679**	**0.1710**	**5.3389**	**0.0000**	**11,949.5739**	**11,949.5739**	**1.0574**	**0.0000**	**11,976.0085**

	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	**60.97**	**43.01**	**-1.40**	**0.00**	**0.00**	**87.55**	**10.40**	**0.00**	**86.98**	**17.62**	**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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Total	**0.0590**	**0.3068**	**0.5501**	**1.7800e-003**	**0.1195**	**2.0700e-003**	**0.1216**	**0.0320**	**1.9500e-003**	**0.0339**		**180.4384**	**180.4384**	**9.4500e-003**	**0.0000**	**180.6748**

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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Total	**0.0590**	**0.3068**	**0.5501**	**1.7800e-003**	**0.1195**	**2.0700e-003**	**0.1216**	**0.0320**	**1.9500e-003**	**0.0339**		**180.4384**	**180.4384**	**9.4500e-003**	**0.0000**	**180.6748**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	992.00	16.80	6.60	50.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					8.2865	0.0000	8.2865	4.5525	0.0000	4.5525			0.0000			0.0000
Off-Road	2.4101	25.3983	15.7446	0.0266		1.2863	1.2863		1.1845	1.1845		2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**2.4101**	**25.3983**	**15.7446**	**0.0266**	**8.2865**	**1.2863**	**9.5728**	**4.5525**	**1.1845**	**5.7370**		**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.8672	26.9047	4.3815	0.0868	2.0656	0.1324	2.1979	0.5662	0.1266	0.6928		9,116.2445	9,116.2445	0.2320		9,122.0448
Vendor	4.6300e-003	0.1223	0.0258	2.7000e-004	6.1300e-003	9.0000e-004	7.0300e-003	1.7600e-003	8.6000e-004	2.6300e-003		28.0371	28.0371	1.8800e-003		28.0840
Worker	0.0914	0.0609	0.7368	1.8900e-003	0.1788	1.1700e-003	0.1800	0.0474	1.0700e-003	0.0485		188.4088	188.4088	5.6200e-003		188.5493
Total	**0.9633**	**27.0880**	**5.1441**	**0.0890**	**2.2505**	**0.1344**	**2.3849**	**0.6154**	**0.1286**	**0.7440**		**9,332.6904**	**9,332.6904**	**0.2395**		**9,338.6781**

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					8.2865	0.0000	8.2865	4.5525	0.0000	4.5525			0.0000			0.0000
Off-Road	0.3533	2.8259	16.0368	0.0266		0.0424	0.0424		0.0424	0.0424	0.0000	2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**0.3533**	**2.8259**	**16.0368**	**0.0266**	**8.2865**	**0.0424**	**8.3289**	**4.5525**	**0.0424**	**4.5949**	**0.0000**	**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.8672	26.9047	4.3815	0.0868	2.0656	0.1324	2.1979	0.5662	0.1266	0.6928		9,116.2445	9,116.2445	0.2320		9,122.0448
Vendor	4.6300e-003	0.1223	0.0258	2.7000e-004	6.1300e-003	9.0000e-004	7.0300e-003	1.7600e-003	8.6000e-004	2.6300e-003		28.0371	28.0371	1.8800e-003		28.0840
Worker	0.0914	0.0609	0.7368	1.8900e-003	0.1788	1.1700e-003	0.1800	0.0474	1.0700e-003	0.0485		188.4088	188.4088	5.6200e-003		188.5493
Total	**0.9633**	**27.0880**	**5.1441**	**0.0890**	**2.2505**	**0.1344**	**2.3849**	**0.6154**	**0.1286**	**0.7440**		**9,332.6904**	**9,332.6904**	**0.2395**		**9,338.6781**

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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Unmitigated	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996

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
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**

5.2 Energy by Land Use - NaturalGas

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
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

	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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

SDDER_Levee72

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblAreaCoating	Area_EF_Residential_Interior	150	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	868.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	109.00	992.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	0.0354	0.5616	0.2193	1.2100e-003	0.1100	0.0149	0.1249	0.0541	0.0138	0.0679	0.0000	113.3401	113.3401	0.0102	0.0000	113.5938
Maximum	**0.0354**	**0.5616**	**0.2193**	**1.2100e-003**	**0.1100**	**0.0149**	**0.1249**	**0.0541**	**0.0138**	**0.0679**	**0.0000**	**113.3401**	**113.3401**	**0.0102**	**0.0000**	**113.5938**

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					
2019	0.0138	0.3245	0.2224	1.2100e-003	0.1100	1.8600e-003	0.1119	0.0541	1.8000e-003	0.0559	0.0000	113.3401	113.3401	0.0102	0.0000	113.5938
Maximum	**0.0138**	**0.3245**	**0.2224**	**1.2100e-003**	**0.1100**	**1.8600e-003**	**0.1119**	**0.0541**	**1.8000e-003**	**0.0559**	**0.0000**	**113.3401**	**113.3401**	**0.0102**	**0.0000**	**113.5938**

	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	**60.97**	**42.21**	**-1.40**	**0.00**	**0.00**	**87.53**	**10.45**	**0.00**	**86.95**	**17.66**	**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	**7-15-2019**	**9-30-2019**	0.5785	0.3235
		Highest	0.5785	0.3235

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.0900e-003**	**0.0176**	**0.0289**	**9.0000e-005**	**6.4800e-003**	**1.2000e-004**	**6.6000e-003**	**1.7400e-003**	**1.1000e-004**	**1.8500e-003**	**0.0183**	**9.8317**	**9.8500**	**1.6100e-003**	**1.0000e-005**	**9.8937**

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.0900e-003**	**0.0176**	**0.0289**	**9.0000e-005**	**6.4800e-003**	**1.2000e-004**	**6.6000e-003**	**1.7400e-003**	**1.1000e-004**	**1.8500e-003**	**0.0183**	**9.8317**	**9.8500**	**1.6100e-003**	**1.0000e-005**	**9.8937**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	992.00	16.80	6.60	50.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					0.0870	0.0000	0.0870	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2667	0.1653	2.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	24.9270	24.9270	7.7900e-003	0.0000	25.1217
Total	**0.0253**	**0.2667**	**0.1653**	**2.8000e-004**	**0.0870**	**0.0135**	**0.1005**	**0.0478**	**0.0124**	**0.0602**	**0.0000**	**24.9270**	**24.9270**	**7.7900e-003**	**0.0000**	**25.1217**

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	9.1600e-003	0.2929	0.0470	9.1000e-004	0.0211	1.4000e-003	0.0225	5.8000e-003	1.3300e-003	7.1400e-003	0.0000	86.5008	86.5008	2.2900e-003	0.0000	86.5580
Vendor	5.0000e-005	1.3000e-003	2.9000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2634	0.2634	2.0000e-005	0.0000	0.2639
Worker	8.9000e-004	7.1000e-004	6.7400e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	5.0000e-004	0.0000	1.6490	1.6490	5.0000e-005	0.0000	1.6502
Total	**0.0101**	**0.2949**	**0.0540**	**9.3000e-004**	**0.0230**	**1.4200e-003**	**0.0244**	**6.3000e-003**	**1.3500e-003**	**7.6700e-003**	**0.0000**	**88.4132**	**88.4132**	**2.3600e-003**	**0.0000**	**88.4721**

3.2 Grading - 2019

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					0.0870	0.0000	0.0870	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0297	0.1684	2.8000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.9269	24.9269	7.7900e-003	0.0000	25.1217
Total	**3.7100e-003**	**0.0297**	**0.1684**	**2.8000e-004**	**0.0870**	**4.5000e-004**	**0.0875**	**0.0478**	**4.5000e-004**	**0.0483**	**0.0000**	**24.9269**	**24.9269**	**7.7900e-003**	**0.0000**	**25.1217**

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	9.1600e-003	0.2929	0.0470	9.1000e-004	0.0211	1.4000e-003	0.0225	5.8000e-003	1.3300e-003	7.1400e-003	0.0000	86.5008	86.5008	2.2900e-003	0.0000	86.5580
Vendor	5.0000e-005	1.3000e-003	2.9000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2634	0.2634	2.0000e-005	0.0000	0.2639
Worker	8.9000e-004	7.1000e-004	6.7400e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	5.0000e-004	0.0000	1.6490	1.6490	5.0000e-005	0.0000	1.6502
Total	**0.0101**	**0.2949**	**0.0540**	**9.3000e-004**	**0.0230**	**1.4200e-003**	**0.0244**	**6.3000e-003**	**1.3500e-003**	**7.6700e-003**	**0.0000**	**88.4132**	**88.4132**	**2.3600e-003**	**0.0000**	**88.4721**

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	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Unmitigated	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2132	5.0000e-005	1.0000e-005	1.2179
Unmitigated	1.2132	5.0000e-005	1.0000e-005	1.2179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

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

SDDER_Levee73

San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
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

SDDER_Levee73 - San Joaquin County, Summer

Project Characteristics - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblAreaCoating	Area_EF_Residential_Interior	150	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	1,116.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	140.00	1,275.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	3.6208	60.1617	22.1387	0.1404	11.1280	1.4585	12.5865	5.3297	1.3492	6.6788	0.0000	14,550.2767	14,550.2767	1.1236	0.0000	14,578.3660
Maximum	**3.6208**	**60.1617**	**22.1387**	**0.1404**	**11.1280**	**1.4585**	**12.5865**	**5.3297**	**1.3492**	**6.6788**	**0.0000**	**14,550.2767**	**14,550.2767**	**1.1236**	**0.0000**	**14,578.3660**

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					
2019	1.5640	37.5893	22.4308	0.1404	11.1280	0.2146	11.3426	5.3297	0.2071	5.5368	0.0000	14,550.2767	14,550.2767	1.1236	0.0000	14,578.3660
Maximum	**1.5640**	**37.5893**	**22.4308**	**0.1404**	**11.1280**	**0.2146**	**11.3426**	**5.3297**	**0.2071**	**5.5368**	**0.0000**	**14,550.2767**	**14,550.2767**	**1.1236**	**0.0000**	**14,578.3660**

	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	**56.80**	**37.52**	**-1.32**	**0.00**	**0.00**	**85.28**	**9.88**	**0.00**	**84.65**	**17.10**	**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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Total	**0.0590**	**0.3068**	**0.5501**	**1.7800e-003**	**0.1195**	**2.0700e-003**	**0.1216**	**0.0320**	**1.9500e-003**	**0.0339**		**180.4384**	**180.4384**	**9.4500e-003**	**0.0000**	**180.6748**

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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Total	**0.0590**	**0.3068**	**0.5501**	**1.7800e-003**	**0.1195**	**2.0700e-003**	**0.1216**	**0.0320**	**1.9500e-003**	**0.0339**		**180.4384**	**180.4384**	**9.4500e-003**	**0.0000**	**180.6748**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	1,275.00	16.80	6.60	50.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					8.2882	0.0000	8.2882	4.5528	0.0000	4.5528			0.0000			0.0000
Off-Road	2.4101	25.3983	15.7446	0.0266		1.2863	1.2863		1.1845	1.1845		2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**2.4101**	**25.3983**	**15.7446**	**0.0266**	**8.2882**	**1.2863**	**9.5745**	**4.5528**	**1.1845**	**5.7372**		**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	1.1146	34.5802	5.6315	0.1116	2.6548	0.1701	2.8250	0.7277	0.1628	0.8905		11,716.9473	11,716.9473	0.2982		11,724.4023
Vendor	4.6300e-003	0.1223	0.0258	2.7000e-004	6.1300e-003	9.0000e-004	7.0300e-003	1.7600e-003	8.6000e-004	2.6300e-003		28.0371	28.0371	1.8800e-003		28.0840
Worker	0.0914	0.0609	0.7368	1.8900e-003	0.1788	1.1700e-003	0.1800	0.0474	1.0700e-003	0.0485		188.4088	188.4088	5.6200e-003		188.5493
Total	**1.2107**	**34.7634**	**6.3941**	**0.1138**	**2.8398**	**0.1722**	**3.0120**	**0.7769**	**0.1647**	**0.9416**		**11,933.3932**	**11,933.3932**	**0.3057**		**11,941.0357**

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					8.2882	0.0000	8.2882	4.5528	0.0000	4.5528			0.0000			0.0000
Off-Road	0.3533	2.8259	16.0368	0.0266		0.0424	0.0424		0.0424	0.0424	0.0000	2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**0.3533**	**2.8259**	**16.0368**	**0.0266**	**8.2882**	**0.0424**	**8.3307**	**4.5528**	**0.0424**	**4.5952**	**0.0000**	**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	1.1146	34.5802	5.6315	0.1116	2.6548	0.1701	2.8250	0.7277	0.1628	0.8905		11,716.9473	11,716.9473	0.2982		11,724.4023
Vendor	4.6300e-003	0.1223	0.0258	2.7000e-004	6.1300e-003	9.0000e-004	7.0300e-003	1.7600e-003	8.6000e-004	2.6300e-003		28.0371	28.0371	1.8800e-003		28.0840
Worker	0.0914	0.0609	0.7368	1.8900e-003	0.1788	1.1700e-003	0.1800	0.0474	1.0700e-003	0.0485		188.4088	188.4088	5.6200e-003		188.5493
Total	**1.2107**	**34.7634**	**6.3941**	**0.1138**	**2.8398**	**0.1722**	**3.0120**	**0.7769**	**0.1647**	**0.9416**		**11,933.3932**	**11,933.3932**	**0.3057**		**11,941.0357**

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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Unmitigated	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996

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
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**

5.2 Energy by Land Use - NaturalGas

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
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

	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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

SDDER_Levee73

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblAreaCoating	Area_EF_Residential_Interior	150	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	1,116.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	140.00	1,275.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	0.0380	0.6451	0.2327	1.4700e-003	0.1161	0.0153	0.1314	0.0558	0.0142	0.0699	0.0000	138.0173	138.0173	0.0108	0.0000	138.2873
Maximum	**0.0380**	**0.6451**	**0.2327**	**1.4700e-003**	**0.1161**	**0.0153**	**0.1314**	**0.0558**	**0.0142**	**0.0699**	**0.0000**	**138.0173**	**138.0173**	**0.0108**	**0.0000**	**138.2873**

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					
2019	0.0164	0.4081	0.2358	1.4700e-003	0.1161	2.2600e-003	0.1183	0.0558	2.1800e-003	0.0580	0.0000	138.0172	138.0172	0.0108	0.0000	138.2873
Maximum	**0.0164**	**0.4081**	**0.2358**	**1.4700e-003**	**0.1161**	**2.2600e-003**	**0.1183**	**0.0558**	**2.1800e-003**	**0.0580**	**0.0000**	**138.0172**	**138.0172**	**0.0108**	**0.0000**	**138.2873**

	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	**56.80**	**36.74**	**-1.32**	**0.00**	**0.00**	**85.25**	**9.94**	**0.00**	**84.62**	**17.14**	**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	**7-15-2019**	**9-30-2019**	0.6606	0.4055
		Highest	0.6606	0.4055

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.0900e-003**	**0.0176**	**0.0289**	**9.0000e-005**	**6.4800e-003**	**1.2000e-004**	**6.6000e-003**	**1.7400e-003**	**1.1000e-004**	**1.8500e-003**	**0.0183**	**9.8317**	**9.8500**	**1.6100e-003**	**1.0000e-005**	**9.8937**

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.0900e-003**	**0.0176**	**0.0289**	**9.0000e-005**	**6.4800e-003**	**1.2000e-004**	**6.6000e-003**	**1.7400e-003**	**1.1000e-004**	**1.8500e-003**	**0.0183**	**9.8317**	**9.8500**	**1.6100e-003**	**1.0000e-005**	**9.8937**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	1,275.00	16.80	6.60	50.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					0.0870	0.0000	0.0870	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2667	0.1653	2.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	24.9270	24.9270	7.7900e-003	0.0000	25.1217
Total	**0.0253**	**0.2667**	**0.1653**	**2.8000e-004**	**0.0870**	**0.0135**	**0.1005**	**0.0478**	**0.0124**	**0.0602**	**0.0000**	**24.9270**	**24.9270**	**7.7900e-003**	**0.0000**	**25.1217**

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	0.0118	0.3764	0.0604	1.1700e-003	0.0271	1.7900e-003	0.0289	7.4600e-003	1.7200e-003	9.1800e-003	0.0000	111.1779	111.1779	2.9400e-003	0.0000	111.2515
Vendor	5.0000e-005	1.3000e-003	2.9000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2634	0.2634	2.0000e-005	0.0000	0.2639
Worker	8.9000e-004	7.1000e-004	6.7400e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	5.0000e-004	0.0000	1.6490	1.6490	5.0000e-005	0.0000	1.6502
Total	**0.0127**	**0.3784**	**0.0674**	**1.1900e-003**	**0.0290**	**1.8100e-003**	**0.0308**	**7.9600e-003**	**1.7400e-003**	**9.7100e-003**	**0.0000**	**113.0903**	**113.0903**	**3.0100e-003**	**0.0000**	**113.1656**

3.2 Grading - 2019

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					0.0870	0.0000	0.0870	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0297	0.1684	2.8000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.9269	24.9269	7.7900e-003	0.0000	25.1217
Total	**3.7100e-003**	**0.0297**	**0.1684**	**2.8000e-004**	**0.0870**	**4.5000e-004**	**0.0875**	**0.0478**	**4.5000e-004**	**0.0483**	**0.0000**	**24.9269**	**24.9269**	**7.7900e-003**	**0.0000**	**25.1217**

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	0.0118	0.3764	0.0604	1.1700e-003	0.0271	1.7900e-003	0.0289	7.4600e-003	1.7200e-003	9.1800e-003	0.0000	111.1779	111.1779	2.9400e-003	0.0000	111.2515
Vendor	5.0000e-005	1.3000e-003	2.9000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2634	0.2634	2.0000e-005	0.0000	0.2639
Worker	8.9000e-004	7.1000e-004	6.7400e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	5.0000e-004	0.0000	1.6490	1.6490	5.0000e-005	0.0000	1.6502
Total	**0.0127**	**0.3784**	**0.0674**	**1.1900e-003**	**0.0290**	**1.8100e-003**	**0.0308**	**7.9600e-003**	**1.7400e-003**	**9.7100e-003**	**0.0000**	**113.0903**	**113.0903**	**3.0100e-003**	**0.0000**	**113.1656**

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	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Unmitigated	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2132	5.0000e-005	1.0000e-005	1.2179
Unmitigated	1.2132	5.0000e-005	1.0000e-005	1.2179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

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

SDDER_Levee74

San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
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

SDDER_Levee74 - San Joaquin County, Summer

Project Characteristics - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblAreaCoating	Area_EF_Residential_Interior	150	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	1,716.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	215.00	1,962.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	4.2214	78.7943	25.1730	0.2005	12.5627	1.5502	14.1129	5.7224	1.4369	7.1593	0.0000	20,863.6436	20,863.6436	1.2843	0.0000	20,895.7499
Maximum	**4.2214**	**78.7943**	**25.1730**	**0.2005**	**12.5627**	**1.5502**	**14.1129**	**5.7224**	**1.4369**	**7.1593**	**0.0000**	**20,863.6436**	**20,863.6436**	**1.2843**	**0.0000**	**20,895.7499**

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					
2019	2.1646	56.2219	25.4652	0.2005	12.5627	0.3063	12.8690	5.7224	0.2948	6.0173	0.0000	20,863.6436	20,863.6436	1.2843	0.0000	20,895.7499
Maximum	**2.1646**	**56.2219**	**25.4652**	**0.2005**	**12.5627**	**0.3063**	**12.8690**	**5.7224**	**0.2948**	**6.0173**	**0.0000**	**20,863.6436**	**20,863.6436**	**1.2843**	**0.0000**	**20,895.7499**

	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	**48.72**	**28.65**	**-1.16**	**0.00**	**0.00**	**80.24**	**8.81**	**0.00**	**79.48**	**15.95**	**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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Total	**0.0590**	**0.3068**	**0.5501**	**1.7800e-003**	**0.1195**	**2.0700e-003**	**0.1216**	**0.0320**	**1.9500e-003**	**0.0339**		**180.4384**	**180.4384**	**9.4500e-003**	**0.0000**	**180.6748**

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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Total	**0.0590**	**0.3068**	**0.5501**	**1.7800e-003**	**0.1195**	**2.0700e-003**	**0.1216**	**0.0320**	**1.9500e-003**	**0.0339**		**180.4384**	**180.4384**	**9.4500e-003**	**0.0000**	**180.6748**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	1,962.00	16.80	6.60	50.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					8.2924	0.0000	8.2924	4.5534	0.0000	4.5534			0.0000			0.0000
Off-Road	2.4101	25.3983	15.7446	0.0266		1.2863	1.2863		1.1845	1.1845		2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**2.4101**	**25.3983**	**15.7446**	**0.0266**	**8.2924**	**1.2863**	**9.5787**	**4.5534**	**1.1845**	**5.7379**		**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	1.7152	53.2128	8.6658	0.1717	4.0853	0.2618	4.3471	1.1199	0.2505	1.3703		18,030.3142	18,030.3142	0.4589		18,041.7862
Vendor	4.6300e-003	0.1223	0.0258	2.7000e-004	6.1300e-003	9.0000e-004	7.0300e-003	1.7600e-003	8.6000e-004	2.6300e-003		28.0371	28.0371	1.8800e-003		28.0840
Worker	0.0914	0.0609	0.7368	1.8900e-003	0.1788	1.1700e-003	0.1800	0.0474	1.0700e-003	0.0485		188.4088	188.4088	5.6200e-003		188.5493
Total	**1.8113**	**53.3960**	**9.4284**	**0.1739**	**4.2703**	**0.2639**	**4.5341**	**1.1690**	**0.2524**	**1.4214**		**18,246.7601**	**18,246.7601**	**0.4664**		**18,258.4195**

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					8.2924	0.0000	8.2924	4.5534	0.0000	4.5534			0.0000			0.0000
Off-Road	0.3533	2.8259	16.0368	0.0266		0.0424	0.0424		0.0424	0.0424	0.0000	2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**0.3533**	**2.8259**	**16.0368**	**0.0266**	**8.2924**	**0.0424**	**8.3349**	**4.5534**	**0.0424**	**4.5958**	**0.0000**	**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	1.7152	53.2128	8.6658	0.1717	4.0853	0.2618	4.3471	1.1199	0.2505	1.3703		18,030.3142	18,030.3142	0.4589		18,041.7862
Vendor	4.6300e-003	0.1223	0.0258	2.7000e-004	6.1300e-003	9.0000e-004	7.0300e-003	1.7600e-003	8.6000e-004	2.6300e-003		28.0371	28.0371	1.8800e-003		28.0840
Worker	0.0914	0.0609	0.7368	1.8900e-003	0.1788	1.1700e-003	0.1800	0.0474	1.0700e-003	0.0485		188.4088	188.4088	5.6200e-003		188.5493
Total	**1.8113**	**53.3960**	**9.4284**	**0.1739**	**4.2703**	**0.2639**	**4.5341**	**1.1690**	**0.2524**	**1.4214**		**18,246.7601**	**18,246.7601**	**0.4664**		**18,258.4195**

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	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746
Unmitigated	0.0568	0.3068	0.5500	1.7800e-003	0.1195	2.0700e-003	0.1216	0.0320	1.9500e-003	0.0339		180.4382	180.4382	9.4500e-003		180.6746

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996

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
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**

5.2 Energy by Land Use - NaturalGas

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
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

	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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

SDDER_Levee74

San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	51
Climate Zone	2			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Residential_Exterior	150	100
tblAreaCoating	Area_EF_Residential_Interior	150	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	1,716.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	50.00
tblTripsAndVMT	HaulingTripNumber	215.00	1,962.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	0.0444	0.8479	0.2652	2.1000e-003	0.1307	0.0163	0.1470	0.0598	0.0151	0.0749	0.0000	197.9225	197.9225	0.0124	0.0000	198.2322
Maximum	**0.0444**	**0.8479**	**0.2652**	**2.1000e-003**	**0.1307**	**0.0163**	**0.1470**	**0.0598**	**0.0151**	**0.0749**	**0.0000**	**197.9225**	**197.9225**	**0.0124**	**0.0000**	**198.2322**

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					
2019	0.0228	0.6109	0.2683	2.1000e-003	0.1307	3.2300e-003	0.1339	0.0598	3.1100e-003	0.0629	0.0000	197.9225	197.9225	0.0124	0.0000	198.2322
Maximum	**0.0228**	**0.6109**	**0.2683**	**2.1000e-003**	**0.1307**	**3.2300e-003**	**0.1339**	**0.0598**	**3.1100e-003**	**0.0629**	**0.0000**	**197.9225**	**197.9225**	**0.0124**	**0.0000**	**198.2322**

	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	**48.66**	**27.95**	**-1.16**	**0.00**	**0.00**	**80.17**	**8.88**	**0.00**	**79.40**	**16.01**	**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	**7-15-2019**	**9-30-2019**	0.8598	0.6047
		Highest	0.8598	0.6047

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.0900e-003**	**0.0176**	**0.0289**	**9.0000e-005**	**6.4800e-003**	**1.2000e-004**	**6.6000e-003**	**1.7400e-003**	**1.1000e-004**	**1.8500e-003**	**0.0183**	**9.8317**	**9.8500**	**1.6100e-003**	**1.0000e-005**	**9.8937**

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.0900e-003**	**0.0176**	**0.0289**	**9.0000e-005**	**6.4800e-003**	**1.2000e-004**	**6.6000e-003**	**1.7400e-003**	**1.1000e-004**	**1.8500e-003**	**0.0183**	**9.8317**	**9.8500**	**1.6100e-003**	**1.0000e-005**	**9.8937**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	1,962.00	16.80	6.60	50.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					0.0871	0.0000	0.0871	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2667	0.1653	2.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	24.9270	24.9270	7.7900e-003	0.0000	25.1217
Total	**0.0253**	**0.2667**	**0.1653**	**2.8000e-004**	**0.0871**	**0.0135**	**0.1006**	**0.0478**	**0.0124**	**0.0603**	**0.0000**	**24.9270**	**24.9270**	**7.7900e-003**	**0.0000**	**25.1217**

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	0.0181	0.5792	0.0929	1.8000e-003	0.0418	2.7600e-003	0.0445	0.0115	2.6400e-003	0.0141	0.0000	171.0832	171.0832	4.5300e-003	0.0000	171.1964
Vendor	5.0000e-005	1.3000e-003	2.9000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2634	0.2634	2.0000e-005	0.0000	0.2639
Worker	8.9000e-004	7.1000e-004	6.7400e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	5.0000e-004	0.0000	1.6490	1.6490	5.0000e-005	0.0000	1.6502
Total	**0.0191**	**0.5812**	**0.0999**	**1.8200e-003**	**0.0436**	**2.7800e-003**	**0.0464**	**0.0120**	**2.6600e-003**	**0.0147**	**0.0000**	**172.9956**	**172.9956**	**4.6000e-003**	**0.0000**	**173.1105**

3.2 Grading - 2019

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					0.0871	0.0000	0.0871	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0297	0.1684	2.8000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.9269	24.9269	7.7900e-003	0.0000	25.1217
Total	**3.7100e-003**	**0.0297**	**0.1684**	**2.8000e-004**	**0.0871**	**4.5000e-004**	**0.0875**	**0.0478**	**4.5000e-004**	**0.0483**	**0.0000**	**24.9269**	**24.9269**	**7.7900e-003**	**0.0000**	**25.1217**

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	0.0181	0.5792	0.0929	1.8000e-003	0.0418	2.7600e-003	0.0445	0.0115	2.6400e-003	0.0141	0.0000	171.0832	171.0832	4.5300e-003	0.0000	171.1964
Vendor	5.0000e-005	1.3000e-003	2.9000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2634	0.2634	2.0000e-005	0.0000	0.2639
Worker	8.9000e-004	7.1000e-004	6.7400e-003	2.0000e-005	1.8200e-003	1.0000e-005	1.8300e-003	4.8000e-004	1.0000e-005	5.0000e-004	0.0000	1.6490	1.6490	5.0000e-005	0.0000	1.6502
Total	**0.0191**	**0.5812**	**0.0999**	**1.8200e-003**	**0.0436**	**2.7800e-003**	**0.0464**	**0.0120**	**2.6600e-003**	**0.0147**	**0.0000**	**172.9956**	**172.9956**	**4.6000e-003**	**0.0000**	**173.1105**

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	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305
Unmitigated	2.6800e-003	0.0176	0.0289	9.0000e-005	6.4800e-003	1.2000e-004	6.6000e-003	1.7400e-003	1.1000e-004	1.8500e-003	0.0000	8.6185	8.6185	4.8000e-004	0.0000	8.6305

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.540593	0.038119	0.180116	0.134753	0.022260	0.005220	0.015807	0.053428	0.001181	0.001630	0.005273	0.000623	0.000996

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2132	5.0000e-005	1.0000e-005	1.2179
Unmitigated	1.2132	5.0000e-005	1.0000e-005	1.2179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

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

SDDER_Levee76

Tehama County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.1	**Precipitation Freq (Days)**	68
Climate Zone	3			**Operational Year**	2019
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

SDDER_Levee76 - Tehama County, Summer

Project Characteristics - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Parking	0	150
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	2,171.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	26.00
tblTripsAndVMT	HaulingTripNumber	271.00	2,481.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00
tblWater	AerobicPercent	33.00	87.46
tblWater	AnaerobicandFacultativeLagoonsPercent	0.00	2.21
tblWater	SepticTankPercent	67.00	10.33

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					
2019	3.8147	67.0649	22.2646	0.1509	11.1765	1.5027	12.6792	5.3422	1.3915	6.7337	0.0000	15,632.9788	15,632.9788	2.1667	0.0000	15,687.1469
Maximum	**3.8147**	**67.0649**	**22.2646**	**0.1509**	**11.1765**	**1.5027**	**12.6792**	**5.3422**	**1.3915**	**6.7337**	**0.0000**	**15,632.9788**	**15,632.9788**	**2.1667**	**0.0000**	**15,687.1469**

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					
2019	1.7579	44.4925	22.5568	0.1509	11.1765	0.2589	11.4354	5.3422	0.2495	5.5917	0.0000	15,632.9788	15,632.9788	2.1667	0.0000	15,687.1469
Maximum	**1.7579**	**44.4925**	**22.5568**	**0.1509**	**11.1765**	**0.2589**	**11.4354**	**5.3422**	**0.2495**	**5.5917**	**0.0000**	**15,632.9788**	**15,632.9788**	**2.1667**	**0.0000**	**15,687.1469**

	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	**53.92**	**33.66**	**-1.31**	**0.00**	**0.00**	**82.77**	**9.81**	**0.00**	**82.07**	**16.96**	**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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0730	0.5802	0.6450	2.2700e-003	0.1206	3.0500e-003	0.1236	0.0323	2.8900e-003	0.0352		231.2887	231.2887	0.0338		232.1331
Total	**0.0752**	**0.5802**	**0.6451**	**2.2700e-003**	**0.1206**	**3.0500e-003**	**0.1236**	**0.0323**	**2.8900e-003**	**0.0352**		**231.2889**	**231.2889**	**0.0338**	**0.0000**	**232.1334**

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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0730	0.5802	0.6450	2.2700e-003	0.1206	3.0500e-003	0.1236	0.0323	2.8900e-003	0.0352		231.2887	231.2887	0.0338		232.1331
Total	**0.0752**	**0.5802**	**0.6451**	**2.2700e-003**	**0.1206**	**3.0500e-003**	**0.1236**	**0.0323**	**2.8900e-003**	**0.0352**		**231.2889**	**231.2889**	**0.0338**	**0.0000**	**232.1334**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	2,481.00	16.80	6.60	26.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					8.2986	0.0000	8.2986	4.5543	0.0000	4.5543			0.0000			0.0000
Off-Road	2.4101	25.3983	15.7446	0.0266		1.2863	1.2863		1.1845	1.1845		2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**2.4101**	**25.3983**	**15.7446**	**0.0266**	**8.2986**	**1.2863**	**9.5849**	**4.5543**	**1.1845**	**5.7388**		**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	1.2905	41.4626	5.5732	0.1221	2.6929	0.2142	2.9071	0.7387	0.2050	0.9437		12,792.7617	12,792.7617	1.3346		12,826.1264
Vendor	5.1000e-003	0.1247	0.0295	2.8000e-004	6.1300e-003	8.3000e-004	6.9700e-003	1.7700e-003	8.0000e-004	2.5700e-003		29.4271	29.4271	5.7500e-003		29.5707
Worker	0.1090	0.0793	0.9173	1.9500e-003	0.1788	1.3700e-003	0.1802	0.0474	1.2600e-003	0.0487		193.9066	193.9066	8.5100e-003		194.1195
Total	**1.4046**	**41.6666**	**6.5200**	**0.1243**	**2.8779**	**0.2164**	**3.0943**	**0.7879**	**0.2070**	**0.9949**		**13,016.0953**	**13,016.0953**	**1.3489**		**13,049.8166**

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					8.2986	0.0000	8.2986	4.5543	0.0000	4.5543			0.0000			0.0000
Off-Road	0.3533	2.8259	16.0368	0.0266		0.0424	0.0424		0.0424	0.0424	0.0000	2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**0.3533**	**2.8259**	**16.0368**	**0.0266**	**8.2986**	**0.0424**	**8.3411**	**4.5543**	**0.0424**	**4.5968**	**0.0000**	**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	1.2905	41.4626	5.5732	0.1221	2.6929	0.2142	2.9071	0.7387	0.2050	0.9437		12,792.7617	12,792.7617	1.3346		12,826.1264
Vendor	5.1000e-003	0.1247	0.0295	2.8000e-004	6.1300e-003	8.3000e-004	6.9700e-003	1.7700e-003	8.0000e-004	2.5700e-003		29.4271	29.4271	5.7500e-003		29.5707
Worker	0.1090	0.0793	0.9173	1.9500e-003	0.1788	1.3700e-003	0.1802	0.0474	1.2600e-003	0.0487		193.9066	193.9066	8.5100e-003		194.1195
Total	**1.4046**	**41.6666**	**6.5200**	**0.1243**	**2.8779**	**0.2164**	**3.0943**	**0.7879**	**0.2070**	**0.9949**		**13,016.0953**	**13,016.0953**	**1.3489**		**13,049.8166**

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	0.0730	0.5802	0.6450	2.2700e-003	0.1206	3.0500e-003	0.1236	0.0323	2.8900e-003	0.0352		231.2887	231.2887	0.0338		232.1331
Unmitigated	0.0730	0.5802	0.6450	2.2700e-003	0.1206	3.0500e-003	0.1236	0.0323	2.8900e-003	0.0352		231.2887	231.2887	0.0338		232.1331

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.513851	0.031857	0.160281	0.117496	0.038116	0.008132	0.008644	0.111469	0.001247	0.001382	0.005263	0.000923	0.001338

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
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**

5.2 Energy by Land Use - NaturalGas

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
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

	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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

SDDER_Levee76

Tehama County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.1	**Precipitation Freq (Days)**	68
Climate Zone	3			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Parking	0	150
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	2,171.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	26.00
tblTripsAndVMT	HaulingTripNumber	271.00	2,481.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00
tblWater	AerobicPercent	33.00	87.46
tblWater	AnaerobicandFacultativeLagoonsPercent	0.00	2.21
tblWater	SepticTankPercent	67.00	10.33

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					
2019	0.0401	0.7179	0.2358	1.5700e-003	0.1163	0.0158	0.1321	0.0558	0.0146	0.0705	0.0000	147.7057	147.7057	0.0214	0.0000	148.2393
Maximum	**0.0401**	**0.7179**	**0.2358**	**1.5700e-003**	**0.1163**	**0.0158**	**0.1321**	**0.0558**	**0.0146**	**0.0705**	**0.0000**	**147.7057**	**147.7057**	**0.0214**	**0.0000**	**148.2393**

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					
2019	0.0185	0.4809	0.2389	1.5700e-003	0.1163	2.7400e-003	0.1190	0.0558	2.6400e-003	0.0585	0.0000	147.7057	147.7057	0.0214	0.0000	148.2393
Maximum	**0.0185**	**0.4809**	**0.2389**	**1.5700e-003**	**0.1163**	**2.7400e-003**	**0.1190**	**0.0558**	**2.6400e-003**	**0.0585**	**0.0000**	**147.7057**	**147.7057**	**0.0214**	**0.0000**	**148.2393**

	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	**53.83**	**33.01**	**-1.30**	**0.00**	**0.00**	**82.66**	**9.89**	**0.00**	**81.95**	**17.02**	**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	**7-15-2019**	**9-30-2019**	0.7341	0.4790
		Highest	0.7341	0.4790

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	3.4300e-003	0.0333	0.0348	1.2000e-004	6.4800e-003	1.7000e-004	6.6500e-003	1.7400e-003	1.6000e-004	1.9100e-003	0.0000	11.0928	11.0928	1.7800e-003	0.0000	11.1373
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.8400e-003**	**0.0333**	**0.0348**	**1.2000e-004**	**6.4800e-003**	**1.7000e-004**	**6.6500e-003**	**1.7400e-003**	**1.6000e-004**	**1.9100e-003**	**0.0183**	**12.3059**	**12.3242**	**2.9100e-003**	**1.0000e-005**	**12.4005**

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	3.4300e-003	0.0333	0.0348	1.2000e-004	6.4800e-003	1.7000e-004	6.6500e-003	1.7400e-003	1.6000e-004	1.9100e-003	0.0000	11.0928	11.0928	1.7800e-003	0.0000	11.1373
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.8400e-003**	**0.0333**	**0.0348**	**1.2000e-004**	**6.4800e-003**	**1.7000e-004**	**6.6500e-003**	**1.7400e-003**	**1.6000e-004**	**1.9100e-003**	**0.0183**	**12.3059**	**12.3242**	**2.9100e-003**	**1.0000e-005**	**12.4005**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	2,481.00	16.80	6.60	26.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					0.0871	0.0000	0.0871	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2667	0.1653	2.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	24.9270	24.9270	7.7900e-003	0.0000	25.1217
Total	**0.0253**	**0.2667**	**0.1653**	**2.8000e-004**	**0.0871**	**0.0135**	**0.1007**	**0.0478**	**0.0124**	**0.0603**	**0.0000**	**24.9270**	**24.9270**	**7.7900e-003**	**0.0000**	**25.1217**

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	0.0137	0.4489	0.0617	1.2700e-003	0.0273	2.2700e-003	0.0296	7.5100e-003	2.1700e-003	9.6800e-003	0.0000	120.8257	120.8257	0.0134	0.0000	121.1613
Vendor	5.0000e-005	1.3300e-003	3.4000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2759	0.2759	6.0000e-005	0.0000	0.2773
Worker	1.0400e-003	9.7000e-004	8.4500e-003	2.0000e-005	1.8000e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.6772	1.6772	7.0000e-005	0.0000	1.6790
Total	**0.0148**	**0.4512**	**0.0705**	**1.2900e-003**	**0.0291**	**2.2900e-003**	**0.0314**	**8.0100e-003**	**2.1900e-003**	**0.0102**	**0.0000**	**122.7787**	**122.7787**	**0.0136**	**0.0000**	**123.1176**

3.2 Grading - 2019

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					0.0871	0.0000	0.0871	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0297	0.1684	2.8000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.9269	24.9269	7.7900e-003	0.0000	25.1217
Total	**3.7100e-003**	**0.0297**	**0.1684**	**2.8000e-004**	**0.0871**	**4.5000e-004**	**0.0876**	**0.0478**	**4.5000e-004**	**0.0483**	**0.0000**	**24.9269**	**24.9269**	**7.7900e-003**	**0.0000**	**25.1217**

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	0.0137	0.4489	0.0617	1.2700e-003	0.0273	2.2700e-003	0.0296	7.5100e-003	2.1700e-003	9.6800e-003	0.0000	120.8257	120.8257	0.0134	0.0000	121.1613
Vendor	5.0000e-005	1.3300e-003	3.4000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.2759	0.2759	6.0000e-005	0.0000	0.2773
Worker	1.0400e-003	9.7000e-004	8.4500e-003	2.0000e-005	1.8000e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.6772	1.6772	7.0000e-005	0.0000	1.6790
Total	**0.0148**	**0.4512**	**0.0705**	**1.2900e-003**	**0.0291**	**2.2900e-003**	**0.0314**	**8.0100e-003**	**2.1900e-003**	**0.0102**	**0.0000**	**122.7787**	**122.7787**	**0.0136**	**0.0000**	**123.1176**

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	3.4300e-003	0.0333	0.0348	1.2000e-004	6.4800e-003	1.7000e-004	6.6500e-003	1.7400e-003	1.6000e-004	1.9100e-003	0.0000	11.0928	11.0928	1.7800e-003	0.0000	11.1373
Unmitigated	3.4300e-003	0.0333	0.0348	1.2000e-004	6.4800e-003	1.7000e-004	6.6500e-003	1.7400e-003	1.6000e-004	1.9100e-003	0.0000	11.0928	11.0928	1.7800e-003	0.0000	11.1373

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	17,242	17,242
Total	1.89	22.75	16.74	17,242	17,242

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	14.70	6.60	6.60	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.513851	0.031857	0.160281	0.117496	0.038116	0.008132	0.008644	0.111469	0.001247	0.001382	0.005263	0.000923	0.001338

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2132	5.0000e-005	1.0000e-005	1.2179
Unmitigated	1.2132	5.0000e-005	1.0000e-005	1.2179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

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

SDDER_Levee77

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2019
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

SDDER_Levee77 - Sacramento County, Summer

Project Characteristics - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	150
tblAreaCoating	Area_EF_Nonresidential_Interior	100	150
tblAreaCoating	Area_EF_Parking	100	150
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

SDDER_Levee77 - Sacramento County, Summer

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	289.00
tblLandscapeEquipment	NumberSummerDays	250	180
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	CARB_PM_VMT	True	False
tblTripsAndVMT	HaulingTripLength	20.00	16.00
tblTripsAndVMT	HaulingTripNumber	36.00	330.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00
tblWater	AerobicPercent	100.00	87.46
tblWater	AnaDigestCogenCombDigestGasPercent	85.00	0.00
tblWater	AnaDigestCombDigestGasPercent	15.00	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	0.00	2.21
tblWater	SepticTankPercent	0.00	10.33

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					
2019	2.6178	29.6795	17.4940	0.0390	8.6696	1.3051	9.9746	4.6565	1.2024	5.8589	0.0000	3,930.3340	3,930.3340	0.8926	0.0000	3,952.6499
Maximum	**2.6178**	**29.6795**	**17.4940**	**0.0390**	**8.6696**	**1.3051**	**9.9746**	**4.6565**	**1.2024**	**5.8589**	**0.0000**	**3,930.3340**	**3,930.3340**	**0.8926**	**0.0000**	**3,952.6499**

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					
2019	0.5610	7.1071	17.7862	0.0390	8.6696	0.0612	8.7308	4.6565	0.0603	4.7168	0.0000	3,930.3340	3,930.3340	0.8926	0.0000	3,952.6499
Maximum	**0.5610**	**7.1071**	**17.7862**	**0.0390**	**8.6696**	**0.0612**	**8.7308**	**4.6565**	**0.0603**	**4.7168**	**0.0000**	**3,930.3340**	**3,930.3340**	**0.8926**	**0.0000**	**3,952.6499**

SDDER_Levee77 - Sacramento County, Summer

	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	**78.57**	**76.05**	**-1.67**	**0.00**	**0.00**	**95.31**	**12.47**	**0.00**	**94.98**	**19.49**	**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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0601	0.1984	0.6591	1.7100e-003	0.1306	1.9600e-003	0.1325	0.0349	1.8500e-003	0.0368		172.5596	172.5596	8.9100e-003		172.7824
Total	**0.0623**	**0.1984**	**0.6592**	**1.7100e-003**	**0.1306**	**1.9600e-003**	**0.1325**	**0.0349**	**1.8500e-003**	**0.0368**		**172.5598**	**172.5598**	**8.9100e-003**	**0.0000**	**172.7826**

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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0601	0.1984	0.6591	1.7100e-003	0.1306	1.9600e-003	0.1325	0.0349	1.8500e-003	0.0368		172.5596	172.5596	8.9100e-003		172.7824
Total	**0.0623**	**0.1984**	**0.6592**	**1.7100e-003**	**0.1306**	**1.9600e-003**	**0.1325**	**0.0349**	**1.8500e-003**	**0.0368**		**172.5598**	**172.5598**	**8.9100e-003**	**0.0000**	**172.7826**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	330.00	15.00	8.50	16.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					8.2832	0.0000	8.2832	4.5520	0.0000	4.5520			0.0000			0.0000
Off-Road	2.4101	25.3983	15.7446	0.0266		1.2863	1.2863		1.1845	1.1845		2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**2.4101**	**25.3983**	**15.7446**	**0.0266**	**8.2832**	**1.2863**	**9.5695**	**4.5520**	**1.1845**	**5.7365**		**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.1165	4.0934	0.9858	0.0104	0.2188	0.0166	0.2354	0.0599	0.0158	0.0757		1,110.2119	1,110.2119	0.0677		1,111.9054
Vendor	5.6200e-003	0.1365	0.0410	3.1000e-004	7.8600e-003	1.1100e-003	8.9700e-003	2.2600e-003	1.0600e-003	3.3200e-003		33.0084	33.0084	1.8000e-003		33.0535
Worker	0.0855	0.0513	0.7227	1.7100e-003	0.1597	1.0900e-003	0.1608	0.0424	1.0100e-003	0.0434		170.2301	170.2301	5.2200e-003		170.3607
Total	**0.2077**	**4.2812**	**1.7494**	**0.0124**	**0.3864**	**0.0188**	**0.4051**	**0.1045**	**0.0179**	**0.1224**		**1,313.4505**	**1,313.4505**	**0.0748**		**1,315.3195**

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					8.2832	0.0000	8.2832	4.5520	0.0000	4.5520			0.0000			0.0000
Off-Road	0.3533	2.8259	16.0368	0.0266		0.0424	0.0424		0.0424	0.0424	0.0000	2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**0.3533**	**2.8259**	**16.0368**	**0.0266**	**8.2832**	**0.0424**	**8.3257**	**4.5520**	**0.0424**	**4.5944**	**0.0000**	**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	0.1165	4.0934	0.9858	0.0104	0.2188	0.0166	0.2354	0.0599	0.0158	0.0757		1,110.2119	1,110.2119	0.0677		1,111.9054
Vendor	5.6200e-003	0.1365	0.0410	3.1000e-004	7.8600e-003	1.1100e-003	8.9700e-003	2.2600e-003	1.0600e-003	3.3200e-003		33.0084	33.0084	1.8000e-003		33.0535
Worker	0.0855	0.0513	0.7227	1.7100e-003	0.1597	1.0900e-003	0.1608	0.0424	1.0100e-003	0.0434		170.2301	170.2301	5.2200e-003		170.3607
Total	**0.2077**	**4.2812**	**1.7494**	**0.0124**	**0.3864**	**0.0188**	**0.4051**	**0.1045**	**0.0179**	**0.1224**		**1,313.4505**	**1,313.4505**	**0.0748**		**1,315.3195**

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	0.0601	0.1984	0.6591	1.7100e-003	0.1306	1.9600e-003	0.1325	0.0349	1.8500e-003	0.0368		172.5596	172.5596	8.9100e-003		172.7824
Unmitigated	0.0601	0.1984	0.6591	1.7100e-003	0.1306	1.9600e-003	0.1325	0.0349	1.8500e-003	0.0368		172.5596	172.5596	8.9100e-003		172.7824

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	18,899	18,899
Total	1.89	22.75	16.74	18,899	18,899

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	7.50	8.50	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.547085	0.042365	0.202414	0.127049	0.023381	0.005779	0.018348	0.021363	0.002103	0.002394	0.006067	0.000620	0.001032

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
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**

5.2 Energy by Land Use - NaturalGas

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
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

	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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

SDDER_Levee77

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	150
tblAreaCoating	Area_EF_Nonresidential_Interior	100	150
tblAreaCoating	Area_EF_Parking	100	150
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	MaterialExported	0.00	289.00
tblLandscapeEquipment	NumberSummerDays	250	180
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	CARB_PM_VMT	True	False
tblTripsAndVMT	HaulingTripLength	20.00	16.00
tblTripsAndVMT	HaulingTripNumber	36.00	330.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00
tblWater	AerobicPercent	100.00	87.46
tblWater	AnaDigestCogenCombDigestGasPercent	85.00	0.00
tblWater	AnaDigestCombDigestGasPercent	15.00	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	0.00	2.21
tblWater	SepticTankPercent	0.00	10.33

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					
2019	0.0274	0.3131	0.1827	4.1000e-004	0.0909	0.0137	0.1046	0.0489	0.0126	0.0615	0.0000	37.1978	37.1978	8.5100e-003	0.0000	37.4106
Maximum	**0.0274**	**0.3131**	**0.1827**	**4.1000e-004**	**0.0909**	**0.0137**	**0.1046**	**0.0489**	**0.0126**	**0.0615**	**0.0000**	**37.1978**	**37.1978**	**8.5100e-003**	**0.0000**	**37.4106**

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					
2019	5.8100e-003	0.0761	0.1858	4.1000e-004	0.0909	6.5000e-004	0.0916	0.0489	6.4000e-004	0.0495	0.0000	37.1978	37.1978	8.5100e-003	0.0000	37.4106
Maximum	**5.8100e-003**	**0.0761**	**0.1858**	**4.1000e-004**	**0.0909**	**6.5000e-004**	**0.0916**	**0.0489**	**6.4000e-004**	**0.0495**	**0.0000**	**37.1978**	**37.1978**	**8.5100e-003**	**0.0000**	**37.4106**

	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	**78.80**	**75.69**	**-1.68**	**0.00**	**0.00**	**95.26**	**12.48**	**0.00**	**94.93**	**19.50**	**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	**7-15-2019**	**9-30-2019**	0.3345	0.0794
		Highest	0.3345	0.0794

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.7000e-003	0.0117	0.0328	9.0000e-005	7.0500e-003	1.1000e-004	7.1600e-003	1.8900e-003	1.0000e-004	2.0000e-003	0.0000	8.0841	8.0841	4.4000e-004	0.0000	8.0951
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.1100e-003**	**0.0117**	**0.0328**	**9.0000e-005**	**7.0500e-003**	**1.1000e-004**	**7.1600e-003**	**1.8900e-003**	**1.0000e-004**	**2.0000e-003**	**0.0183**	**9.2973**	**9.3156**	**1.5700e-003**	**1.0000e-005**	**9.3582**

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	2.7000e-003	0.0117	0.0328	9.0000e-005	7.0500e-003	1.1000e-004	7.1600e-003	1.8900e-003	1.0000e-004	2.0000e-003	0.0000	8.0841	8.0841	4.4000e-004	0.0000	8.0951
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**3.1100e-003**	**0.0117**	**0.0328**	**9.0000e-005**	**7.0500e-003**	**1.1000e-004**	**7.1600e-003**	**1.8900e-003**	**1.0000e-004**	**2.0000e-003**	**0.0183**	**9.2973**	**9.3156**	**1.5700e-003**	**1.0000e-005**	**9.3582**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	330.00	15.00	8.50	16.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					0.0870	0.0000	0.0870	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2667	0.1653	2.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	24.9270	24.9270	7.7900e-003	0.0000	25.1217
Total	**0.0253**	**0.2667**	**0.1653**	**2.8000e-004**	**0.0870**	**0.0135**	**0.1005**	**0.0478**	**0.0124**	**0.0602**	**0.0000**	**24.9270**	**24.9270**	**7.7900e-003**	**0.0000**	**25.1217**

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	1.2400e-003	0.0444	0.0106	1.1000e-004	2.2300e-003	1.8000e-004	2.4000e-003	6.1000e-004	1.7000e-004	7.8000e-004	0.0000	10.4942	10.4942	6.6000e-004	0.0000	10.5107
Vendor	6.0000e-005	1.4800e-003	4.5000e-004	0.0000	8.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3118	0.3118	2.0000e-005	0.0000	0.3122
Worker	8.0000e-004	6.0000e-004	6.3200e-003	2.0000e-005	1.6200e-003	1.0000e-005	1.6300e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4649	1.4649	4.0000e-005	0.0000	1.4660
Total	**2.1000e-003**	**0.0465**	**0.0174**	**1.3000e-004**	**3.9300e-003**	**2.0000e-004**	**4.1200e-003**	**1.0600e-003**	**1.9000e-004**	**1.2500e-003**	**0.0000**	**12.2708**	**12.2708**	**7.2000e-004**	**0.0000**	**12.2889**

3.2 Grading - 2019

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					0.0870	0.0000	0.0870	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0297	0.1684	2.8000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.9269	24.9269	7.7900e-003	0.0000	25.1217
Total	**3.7100e-003**	**0.0297**	**0.1684**	**2.8000e-004**	**0.0870**	**4.5000e-004**	**0.0874**	**0.0478**	**4.5000e-004**	**0.0483**	**0.0000**	**24.9269**	**24.9269**	**7.7900e-003**	**0.0000**	**25.1217**

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	1.2400e-003	0.0444	0.0106	1.1000e-004	2.2300e-003	1.8000e-004	2.4000e-003	6.1000e-004	1.7000e-004	7.8000e-004	0.0000	10.4942	10.4942	6.6000e-004	0.0000	10.5107
Vendor	6.0000e-005	1.4800e-003	4.5000e-004	0.0000	8.0000e-005	1.0000e-005	9.0000e-005	2.0000e-005	1.0000e-005	3.0000e-005	0.0000	0.3118	0.3118	2.0000e-005	0.0000	0.3122
Worker	8.0000e-004	6.0000e-004	6.3200e-003	2.0000e-005	1.6200e-003	1.0000e-005	1.6300e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4649	1.4649	4.0000e-005	0.0000	1.4660
Total	**2.1000e-003**	**0.0465**	**0.0174**	**1.3000e-004**	**3.9300e-003**	**2.0000e-004**	**4.1200e-003**	**1.0600e-003**	**1.9000e-004**	**1.2500e-003**	**0.0000**	**12.2708**	**12.2708**	**7.2000e-004**	**0.0000**	**12.2889**

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	2.7000e-003	0.0117	0.0328	9.0000e-005	7.0500e-003	1.1000e-004	7.1600e-003	1.8900e-003	1.0000e-004	2.0000e-003	0.0000	8.0841	8.0841	4.4000e-004	0.0000	8.0951
Unmitigated	2.7000e-003	0.0117	0.0328	9.0000e-005	7.0500e-003	1.1000e-004	7.1600e-003	1.8900e-003	1.0000e-004	2.0000e-003	0.0000	8.0841	8.0841	4.4000e-004	0.0000	8.0951

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	18,899	18,899
Total	1.89	22.75	16.74	18,899	18,899

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	7.50	8.50	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.547085	0.042365	0.202414	0.127049	0.023381	0.005779	0.018348	0.021363	0.002103	0.002394	0.006067	0.000620	0.001032

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2132	5.0000e-005	1.0000e-005	1.2179
Unmitigated	1.2132	5.0000e-005	1.0000e-005	1.2179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

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

SDDER_Levee79

Butte County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	71
Climate Zone	3			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Parking	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	0.0263	0.2693	0.1739	3.0000e-004	0.0884	0.0135	0.1019	0.0482	0.0125	0.0606	0.0000	26.5837	26.5837	7.9000e-003	0.0000	26.7811
Maximum	**0.0263**	**0.2693**	**0.1739**	**3.0000e-004**	**0.0884**	**0.0135**	**0.1019**	**0.0482**	**0.0125**	**0.0606**	**0.0000**	**26.5837**	**26.5837**	**7.9000e-003**	**0.0000**	**26.7811**

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					
2019	4.7400e-003	0.0323	0.1770	3.0000e-004	0.0884	4.7000e-004	0.0889	0.0482	4.7000e-004	0.0487	0.0000	26.5837	26.5837	7.9000e-003	0.0000	26.7811
Maximum	**4.7400e-003**	**0.0323**	**0.1770**	**3.0000e-004**	**0.0884**	**4.7000e-004**	**0.0889**	**0.0482**	**4.7000e-004**	**0.0487**	**0.0000**	**26.5837**	**26.5837**	**7.9000e-003**	**0.0000**	**26.7811**

	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	**82.00**	**88.00**	**-1.77**	**0.00**	**0.00**	**96.53**	**12.81**	**0.00**	**96.23**	**19.77**	**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	**7-15-2019**	**9-30-2019**	0.2917	0.0366
		Highest	0.2917	0.0366

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	4.2000e-003	0.0297	0.0467	1.2000e-004	7.3300e-003	1.9000e-004	7.5200e-003	1.9800e-003	1.8000e-004	2.1600e-003	0.0000	11.1005	11.1005	1.0500e-003	0.0000	11.1267
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**4.6100e-003**	**0.0297**	**0.0467**	**1.2000e-004**	**7.3300e-003**	**1.9000e-004**	**7.5200e-003**	**1.9800e-003**	**1.8000e-004**	**2.1600e-003**	**0.0183**	**12.3137**	**12.3319**	**2.1800e-003**	**1.0000e-005**	**12.3899**

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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	4.2000e-003	0.0297	0.0467	1.2000e-004	7.3300e-003	1.9000e-004	7.5200e-003	1.9800e-003	1.8000e-004	2.1600e-003	0.0000	11.1005	11.1005	1.0500e-003	0.0000	11.1267
Waste						0.0000	0.0000		0.0000	0.0000	0.0183	0.0000	0.0183	1.0800e-003	0.0000	0.0453
Water						0.0000	0.0000		0.0000	0.0000	0.0000	1.2132	1.2132	5.0000e-005	1.0000e-005	1.2179
Total	**4.6100e-003**	**0.0297**	**0.0467**	**1.2000e-004**	**7.3300e-003**	**1.9000e-004**	**7.5200e-003**	**1.9800e-003**	**1.8000e-004**	**2.1600e-003**	**0.0183**	**12.3137**	**12.3319**	**2.1800e-003**	**1.0000e-005**	**12.3899**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	0.00	12.54	10.52	0.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					0.0869	0.0000	0.0869	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2667	0.1653	2.8000e-004		0.0135	0.0135		0.0124	0.0124	0.0000	24.9270	24.9270	7.7900e-003	0.0000	25.1217
Total	**0.0253**	**0.2667**	**0.1653**	**2.8000e-004**	**0.0869**	**0.0135**	**0.1005**	**0.0478**	**0.0124**	**0.0602**	**0.0000**	**24.9270**	**24.9270**	**7.7900e-003**	**0.0000**	**25.1217**

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	7.0000e-005	1.7800e-003	3.8000e-004	0.0000	1.0000e-004	2.0000e-005	1.1000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.3893	0.3893	3.0000e-005	0.0000	0.3902
Worker	9.5000e-004	8.8000e-004	8.2100e-003	1.0000e-005	1.3400e-003	1.0000e-005	1.3500e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.2674	1.2674	7.0000e-005	0.0000	1.2692
Total	**1.0200e-003**	**2.6600e-003**	**8.5900e-003**	**1.0000e-005**	**1.4400e-003**	**3.0000e-005**	**1.4600e-003**	**3.9000e-004**	**2.0000e-005**	**4.1000e-004**	**0.0000**	**1.6567**	**1.6567**	**1.0000e-004**	**0.0000**	**1.6594**

3.2 Grading - 2019

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					0.0869	0.0000	0.0869	0.0478	0.0000	0.0478	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7100e-003	0.0297	0.1684	2.8000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.9269	24.9269	7.7900e-003	0.0000	25.1217
Total	**3.7100e-003**	**0.0297**	**0.1684**	**2.8000e-004**	**0.0869**	**4.5000e-004**	**0.0874**	**0.0478**	**4.5000e-004**	**0.0482**	**0.0000**	**24.9269**	**24.9269**	**7.7900e-003**	**0.0000**	**25.1217**

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	7.0000e-005	1.7800e-003	3.8000e-004	0.0000	1.0000e-004	2.0000e-005	1.1000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.3893	0.3893	3.0000e-005	0.0000	0.3902
Worker	9.5000e-004	8.8000e-004	8.2100e-003	1.0000e-005	1.3400e-003	1.0000e-005	1.3500e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.2674	1.2674	7.0000e-005	0.0000	1.2692
Total	**1.0200e-003**	**2.6600e-003**	**8.5900e-003**	**1.0000e-005**	**1.4400e-003**	**3.0000e-005**	**1.4600e-003**	**3.9000e-004**	**2.0000e-005**	**4.1000e-004**	**0.0000**	**1.6567**	**1.6567**	**1.0000e-004**	**0.0000**	**1.6594**

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	4.2000e-003	0.0297	0.0467	1.2000e-004	7.3300e-003	1.9000e-004	7.5200e-003	1.9800e-003	1.8000e-004	2.1600e-003	0.0000	11.1005	11.1005	1.0500e-003	0.0000	11.1267
Unmitigated	4.2000e-003	0.0297	0.0467	1.2000e-004	7.3300e-003	1.9000e-004	7.5200e-003	1.9800e-003	1.8000e-004	2.1600e-003	0.0000	11.1005	11.1005	1.0500e-003	0.0000	11.1267

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	19,559	19,559
Total	1.89	22.75	16.74	19,559	19,559

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	10.52	10.52	10.52	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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
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
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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.1000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.1000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2132	5.0000e-005	1.0000e-005	1.2179
Unmitigated	1.2132	5.0000e-005	1.0000e-005	1.2179

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.19148	1.2132	5.0000e-005	1.0000e-005	1.2179
Total		**1.2132**	**5.0000e-005**	**1.0000e-005**	**1.2179**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0183	1.0800e-003	0.0000	0.0453
Unmitigated	0.0183	1.0800e-003	0.0000	0.0453

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.09	0.0183	1.0800e-003	0.0000	0.0453
Total		**0.0183**	**1.0800e-003**	**0.0000**	**0.0453**

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

SDDER_Levee79

Butte County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	1.00	Acre	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	71
Climate Zone	3			**Operational Year**	2019
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 - Utility Company will not affect construction

Land Use -

Construction Phase - project duration is 4 weeks

Off-road Equipment - Equipment specified in project description. Workday duration is 11 hrs.

Trips and VMT - Project specifics from materials and personnel estimate spreadsheet. Hauling trip length = max driving distance to exit the district.

On-road Fugitive Dust - all access roads are paved

Grading -

Construction Off-road Equipment Mitigation - Assuming mitigation.

Vehicle Trips -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Road Dust -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Parking	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	40
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	11.00
tblOffRoadEquipment	UsageHours	7.00	11.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00

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					
2019	2.5226	25.6395	16.7059	0.0285	8.4236	1.2889	9.7125	4.5898	1.1869	5.7767	0.0000	2,805.8943	2,805.8943	0.8297	0.0000	2,826.6370
Maximum	**2.5226**	**25.6395**	**16.7059**	**0.0285**	**8.4236**	**1.2889**	**9.7125**	**4.5898**	**1.1869**	**5.7767**	**0.0000**	**2,805.8943**	**2,805.8943**	**0.8297**	**0.0000**	**2,826.6370**

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					
2019	0.4658	3.0671	16.9981	0.0285	8.4236	0.0450	8.4687	4.5898	0.0449	4.6347	0.0000	2,805.8943	2,805.8943	0.8297	0.0000	2,826.6370
Maximum	**0.4658**	**3.0671**	**16.9981**	**0.0285**	**8.4236**	**0.0450**	**8.4687**	**4.5898**	**0.0449**	**4.6347**	**0.0000**	**2,805.8943**	**2,805.8943**	**0.8297**	**0.0000**	**2,826.6370**

	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	**81.53**	**88.04**	**-1.75**	**0.00**	**0.00**	**96.51**	**12.81**	**0.00**	**96.22**	**19.77**	**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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0927	0.5134	0.9320	2.3000e-003	0.1367	3.4000e-003	0.1401	0.0367	3.2300e-003	0.0399		233.5838	233.5838	0.0207		234.1018
Total	**0.0949**	**0.5134**	**0.9321**	**2.3000e-003**	**0.1367**	**3.4000e-003**	**0.1401**	**0.0367**	**3.2300e-003**	**0.0399**		**233.5840**	**233.5840**	**0.0207**	**0.0000**	**234.1020**

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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	0.0927	0.5134	0.9320	2.3000e-003	0.1367	3.4000e-003	0.1401	0.0367	3.2300e-003	0.0399		233.5838	233.5838	0.0207		234.1018
Total	**0.0949**	**0.5134**	**0.9321**	**2.3000e-003**	**0.1367**	**3.4000e-003**	**0.1401**	**0.0367**	**3.2300e-003**	**0.0399**		**233.5840**	**233.5840**	**0.0207**	**0.0000**	**234.1020**

	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	Grading	Grading	7/15/2019	8/12/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	11.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Plate Compactors	1	11.00	8	0.43
Grading	Rubber Tired Dozers	1	11.00	247	0.40
Grading	Skid Steer Loaders	1	11.00	65	0.37
Grading	Tractors/Loaders/Backhoes	1	11.00	97	0.37

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
Grading	5	14.00	1.00	0.00	12.54	10.52	0.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Grading - 2019

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					8.2804	0.0000	8.2804	4.5516	0.0000	4.5516			0.0000			0.0000
Off-Road	2.4101	25.3983	15.7446	0.0266		1.2863	1.2863		1.1845	1.1845		2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**2.4101**	**25.3983**	**15.7446**	**0.0266**	**8.2804**	**1.2863**	**9.5667**	**4.5516**	**1.1845**	**5.7360**		**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	6.7300e-003	0.1649	0.0343	3.9000e-004	9.7600e-003	1.4800e-003	0.0112	2.8100e-003	1.4200e-003	4.2300e-003		41.3051	41.3051	3.4900e-003		41.3924
Worker	0.1058	0.0763	0.9270	1.4900e-003	0.1335	1.1200e-003	0.1346	0.0354	1.0300e-003	0.0364		147.7057	147.7057	8.3400e-003		147.9142
Total	**0.1125**	**0.2412**	**0.9613**	**1.8800e-003**	**0.1433**	**2.6000e-003**	**0.1459**	**0.0382**	**2.4500e-003**	**0.0407**		**189.0108**	**189.0108**	**0.0118**		**189.3066**

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					8.2804	0.0000	8.2804	4.5516	0.0000	4.5516			0.0000			0.0000
Off-Road	0.3533	2.8259	16.0368	0.0266		0.0424	0.0424		0.0424	0.0424	0.0000	2,616.8835	2,616.8835	0.8179		2,637.3304
Total	**0.3533**	**2.8259**	**16.0368**	**0.0266**	**8.2804**	**0.0424**	**8.3228**	**4.5516**	**0.0424**	**4.5940**	**0.0000**	**2,616.8835**	**2,616.8835**	**0.8179**		**2,637.3304**

3.2 Grading - 2019

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	6.7300e-003	0.1649	0.0343	3.9000e-004	9.7600e-003	1.4800e-003	0.0112	2.8100e-003	1.4200e-003	4.2300e-003		41.3051	41.3051	3.4900e-003		41.3924
Worker	0.1058	0.0763	0.9270	1.4900e-003	0.1335	1.1200e-003	0.1346	0.0354	1.0300e-003	0.0364		147.7057	147.7057	8.3400e-003		147.9142
Total	**0.1125**	**0.2412**	**0.9613**	**1.8800e-003**	**0.1433**	**2.6000e-003**	**0.1459**	**0.0382**	**2.4500e-003**	**0.0407**		**189.0108**	**189.0108**	**0.0118**		**189.3066**

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	0.0927	0.5134	0.9320	2.3000e-003	0.1367	3.4000e-003	0.1401	0.0367	3.2300e-003	0.0399		233.5838	233.5838	0.0207		234.1018
Unmitigated	0.0927	0.5134	0.9320	2.3000e-003	0.1367	3.4000e-003	0.1401	0.0367	3.2300e-003	0.0399		233.5838	233.5838	0.0207		234.1018

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	1.89	22.75	16.74	19,559	19,559
Total	1.89	22.75	16.74	19,559	19,559

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	10.52	10.52	10.52	33.00	48.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651

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
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**

5.2 Energy by Land Use - NaturalGas

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
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

	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	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	2.2500e-003	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**2.2500e-003**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

2. CalEEMod output with input assumptions for each repair site proposed under the for barge hauling scenario. Maximum daily output and annual output.

DWR SDDER Site 45

Sacramento Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	4			**Operational Year**	2021
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 - asume 1 acre for site

Construction Phase - $ week construction period

Off-road Equipment - equipment for in water work derived from PD

Trips and VMT - No trips separate barge calculation

Construction Off-road Equipment Mitigation - Mitigate with Tier 4

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	0.75
tblLandUse	LandUseSquareFeet	0.00	43,560.00
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	8.00	5.00

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					
2019	0.0118	0.1271	0.0931	1.7000e-004	1.1400e-003	6.2200e-003	7.3600e-003	2.3000e-004	5.7200e-003	5.9500e-003	0.0000	15.1431	15.1431	4.6100e-003	0.0000	15.2583
Maximum	**0.0118**	**0.1271**	**0.0931**	**1.7000e-004**	**1.1400e-003**	**6.2200e-003**	**7.3600e-003**	**2.3000e-004**	**5.7200e-003**	**5.9500e-003**	**0.0000**	**15.1431**	**15.1431**	**4.6100e-003**	**0.0000**	**15.2583**

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					
2019	4.5700e-003	0.0339	0.1042	1.7000e-004	8.8000e-004	2.0100e-003	2.8800e-003	2.1000e-004	1.8600e-003	2.0700e-003	0.0000	15.1431	15.1431	4.6100e-003	0.0000	15.2583
Maximum	**4.5700e-003**	**0.0339**	**0.1042**	**1.7000e-004**	**8.8000e-004**	**2.0100e-003**	**2.8800e-003**	**2.1000e-004**	**1.8600e-003**	**2.0700e-003**	**0.0000**	**15.1431**	**15.1431**	**4.6100e-003**	**0.0000**	**15.2583**

	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	**61.34**	**73.36**	**-11.86**	**0.00**	**22.81**	**67.68**	**60.87**	**8.70**	**67.48**	**65.21**	**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)
2	**2-5-2019**	**5-4-2019**	0.1337	0.0370
		Highest	0.1337	0.0370

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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	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
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	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	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
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	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

	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	Grading	Grading	4/1/2019	5/1/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Rubber Tired Dozers	0	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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
Grading	3	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2019

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					4.4000e-004	0.0000	4.4000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0115	0.1268	0.0904	1.6000e-004		6.2100e-003	6.2100e-003		5.7100e-003	5.7100e-003	0.0000	14.5001	14.5001	4.5900e-003	0.0000	14.6148
Total	**0.0115**	**0.1268**	**0.0904**	**1.6000e-004**	**4.4000e-004**	**6.2100e-003**	**6.6500e-003**	**5.0000e-005**	**5.7100e-003**	**5.7600e-003**	**0.0000**	**14.5001**	**14.5001**	**4.5900e-003**	**0.0000**	**14.6148**

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	3.5000e-004	2.8000e-004	2.7600e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6430	0.6430	2.0000e-005	0.0000	0.6435
Total	**3.5000e-004**	**2.8000e-004**	**2.7600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6430**	**0.6430**	**2.0000e-005**	**0.0000**	**0.6435**

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					1.7000e-004	0.0000	1.7000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.2200e-003	0.0336	0.1014	1.6000e-004		2.0000e-003	2.0000e-003		1.8600e-003	1.8600e-003	0.0000	14.5001	14.5001	4.5900e-003	0.0000	14.6148
Total	**4.2200e-003**	**0.0336**	**0.1014**	**1.6000e-004**	**1.7000e-004**	**2.0000e-003**	**2.1700e-003**	**2.0000e-005**	**1.8600e-003**	**1.8800e-003**	**0.0000**	**14.5001**	**14.5001**	**4.5900e-003**	**0.0000**	**14.6148**

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	3.5000e-004	2.8000e-004	2.7600e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6430	0.6430	2.0000e-005	0.0000	0.6435
Total	**3.5000e-004**	**2.8000e-004**	**2.7600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6430**	**0.6430**	**2.0000e-005**	**0.0000**	**0.6435**

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	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
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	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	14.70	6.60	6.60	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
User Defined Industrial	0.536797	0.037585	0.197028	0.120041	0.024345	0.005886	0.021550	0.045582	0.001665	0.001824	0.005876	0.000790	0.001030

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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					
User Defined Industrial	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					
User Defined Industrial	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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	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

DWR SDDER Site 45

Sacramento Valley Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	4			**Operational Year**	2021
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 - asume 1 acre for site

Construction Phase - $ week construction period

Off-road Equipment - equipment for in water work derived from PD

Trips and VMT - No trips separate barge calculation

Construction Off-road Equipment Mitigation - Mitigate with Tier 4

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	0.75
tblLandUse	LandUseSquareFeet	0.00	43,560.00
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	8.00	5.00

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					
2019	1.0312	11.0479	8.1467	0.0147	0.1018	0.5404	0.6422	0.0210	0.4972	0.5182	0.0000	1,458.1084	1,458.1084	0.4420	0.0000	1,469.1577
Maximum	**1.0312**	**11.0479**	**8.1467**	**0.0147**	**0.1018**	**0.5404**	**0.6422**	**0.0210**	**0.4972**	**0.5182**	**0.0000**	**1,458.1084**	**1,458.1084**	**0.4420**	**0.0000**	**1,469.1577**

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					
2019	0.4009	2.9416	9.1078	0.0147	0.0786	0.1744	0.2530	0.0185	0.1619	0.1804	0.0000	1,458.1084	1,458.1084	0.4420	0.0000	1,469.1577
Maximum	**0.4009**	**2.9416**	**9.1078**	**0.0147**	**0.0786**	**0.1744**	**0.2530**	**0.0185**	**0.1619**	**0.1804**	**0.0000**	**1,458.1084**	**1,458.1084**	**0.4420**	**0.0000**	**1,469.1577**

	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	**61.13**	**73.37**	**-11.80**	**0.00**	**22.71**	**67.73**	**60.60**	**11.89**	**67.44**	**65.19**	**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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	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	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	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	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	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	Grading	Grading	4/1/2019	5/1/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Rubber Tired Dozers	0	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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
Grading	3	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2019

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					0.0379	0.0000	0.0379	4.0900e-003	0.0000	4.0900e-003			0.0000			0.0000
Off-Road	0.9976	11.0262	7.8589	0.0140		0.5400	0.5400		0.4968	0.4968		1,389.8780	1,389.8780	0.4397		1,400.8716
Total	**0.9976**	**11.0262**	**7.8589**	**0.0140**	**0.0379**	**0.5400**	**0.5779**	**4.0900e-003**	**0.4968**	**0.5009**		**1,389.8780**	**1,389.8780**	**0.4397**		**1,400.8716**

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	0.0336	0.0217	0.2878	6.9000e-004	0.0639	4.3000e-004	0.0643	0.0169	4.0000e-004	0.0173		68.2304	68.2304	2.2300e-003		68.2861
Total	**0.0336**	**0.0217**	**0.2878**	**6.9000e-004**	**0.0639**	**4.3000e-004**	**0.0643**	**0.0169**	**4.0000e-004**	**0.0173**		**68.2304**	**68.2304**	**2.2300e-003**		**68.2861**

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					0.0148	0.0000	0.0148	1.5900e-003	0.0000	1.5900e-003			0.0000			0.0000
Off-Road	0.3672	2.9199	8.8200	0.0140		0.1740	0.1740		0.1615	0.1615	0.0000	1,389.8780	1,389.8780	0.4397		1,400.8716
Total	**0.3672**	**2.9199**	**8.8200**	**0.0140**	**0.0148**	**0.1740**	**0.1887**	**1.5900e-003**	**0.1615**	**0.1631**	**0.0000**	**1,389.8780**	**1,389.8780**	**0.4397**		**1,400.8716**

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	0.0336	0.0217	0.2878	6.9000e-004	0.0639	4.3000e-004	0.0643	0.0169	4.0000e-004	0.0173		68.2304	68.2304	2.2300e-003		68.2861
Total	**0.0336**	**0.0217**	**0.2878**	**6.9000e-004**	**0.0639**	**4.3000e-004**	**0.0643**	**0.0169**	**4.0000e-004**	**0.0173**		**68.2304**	**68.2304**	**2.2300e-003**		**68.2861**

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	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
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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	14.70	6.60	6.60	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
User Defined Industrial	0.536797	0.037585	0.197028	0.120041	0.024345	0.005886	0.021550	0.045582	0.001665	0.001824	0.005876	0.000790	0.001030

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					
User Defined Industrial	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					
User Defined Industrial	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

	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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

DWR SDDER Site 46 Barge

Sacramento Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	4			**Operational Year**	2021
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 - asume 1 acre for site

Construction Phase - $ week construction period

Off-road Equipment - equipment for in water work derived from PD

Trips and VMT -

Construction Off-road Equipment Mitigation - Mitigate with Tier 4

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	0.75
tblLandUse	LandUseSquareFeet	0.00	43,560.00
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	8.00	5.00

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					
2019	0.0105	0.1130	0.0820	1.5000e-004	1.0400e-003	5.4700e-003	6.5100e-003	2.1000e-004	5.0300e-003	5.2500e-003	0.0000	13.4601	13.4601	4.0900e-003	0.0000	13.5624
Maximum	**0.0105**	**0.1130**	**0.0820**	**1.5000e-004**	**1.0400e-003**	**5.4700e-003**	**6.5100e-003**	**2.1000e-004**	**5.0300e-003**	**5.2500e-003**	**0.0000**	**13.4601**	**13.4601**	**4.0900e-003**	**0.0000**	**13.5624**

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					
2019	3.8700e-003	0.0278	0.0921	1.5000e-004	8.0000e-004	1.6300e-003	2.4300e-003	1.9000e-004	1.5100e-003	1.7000e-003	0.0000	13.4601	13.4601	4.0900e-003	0.0000	13.5624
Maximum	**3.8700e-003**	**0.0278**	**0.0921**	**1.5000e-004**	**8.0000e-004**	**1.6300e-003**	**2.4300e-003**	**1.9000e-004**	**1.5100e-003**	**1.7000e-003**	**0.0000**	**13.4601**	**13.4601**	**4.0900e-003**	**0.0000**	**13.5624**

	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	**63.11**	**75.35**	**-12.30**	**0.00**	**23.08**	**70.20**	**62.67**	**9.52**	**69.98**	**67.62**	**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)
2	**2-5-2019**	**5-4-2019**	0.1218	0.0313
		Highest	0.1218	0.0313

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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	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
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	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	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
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	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

	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	Grading	Grading	4/1/2019	4/29/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Rubber Tired Dozers	0	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37

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
Grading	3	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2019

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					4.0000e-004	0.0000	4.0000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0102	0.1127	0.0795	1.4000e-004		5.4700e-003	5.4700e-003		5.0300e-003	5.0300e-003	0.0000	12.8730	12.8730	4.0700e-003	0.0000	12.9748
Total	**0.0102**	**0.1127**	**0.0795**	**1.4000e-004**	**4.0000e-004**	**5.4700e-003**	**5.8700e-003**	**4.0000e-005**	**5.0300e-003**	**5.0700e-003**	**0.0000**	**12.8730**	**12.8730**	**4.0700e-003**	**0.0000**	**12.9748**

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	3.2000e-004	2.5000e-004	2.5200e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5871	0.5871	2.0000e-005	0.0000	0.5876
Total	**3.2000e-004**	**2.5000e-004**	**2.5200e-003**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**6.5000e-004**	**1.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5871**	**0.5871**	**2.0000e-005**	**0.0000**	**0.5876**

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					1.6000e-004	0.0000	1.6000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.5500e-003	0.0276	0.0896	1.4000e-004		1.6200e-003	1.6200e-003		1.5100e-003	1.5100e-003	0.0000	12.8730	12.8730	4.0700e-003	0.0000	12.9748
Total	**3.5500e-003**	**0.0276**	**0.0896**	**1.4000e-004**	**1.6000e-004**	**1.6200e-003**	**1.7800e-003**	**2.0000e-005**	**1.5100e-003**	**1.5300e-003**	**0.0000**	**12.8730**	**12.8730**	**4.0700e-003**	**0.0000**	**12.9748**

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	3.2000e-004	2.5000e-004	2.5200e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5871	0.5871	2.0000e-005	0.0000	0.5876
Total	**3.2000e-004**	**2.5000e-004**	**2.5200e-003**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**6.5000e-004**	**1.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5871**	**0.5871**	**2.0000e-005**	**0.0000**	**0.5876**

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	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
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	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	14.70	6.60	6.60	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
User Defined Industrial	0.536797	0.037585	0.197028	0.120041	0.024345	0.005886	0.021550	0.045582	0.001665	0.001824	0.005876	0.000790	0.001030

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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					
User Defined Industrial	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					
User Defined Industrial	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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	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

DWR SDDER Site 46 Barge

Sacramento Valley Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	4			**Operational Year**	2021
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 - asume 1 acre for site

Construction Phase - $ week construction period

Off-road Equipment - equipment for in water work derived from PD

Trips and VMT -

Construction Off-road Equipment Mitigation - Mitigate with Tier 4

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	0.75
tblLandUse	LandUseSquareFeet	0.00	43,560.00
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	8.00	5.00

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					
2019	1.0021	10.7558	7.8589	0.0143	0.1018	0.5209	0.6227	0.0210	0.4793	0.5003	0.0000	1,419.6656	1,419.6656	0.4298	0.0000	1,430.4109
Maximum	**1.0021**	**10.7558**	**7.8589**	**0.0143**	**0.1018**	**0.5209**	**0.6227**	**0.0210**	**0.4793**	**0.5003**	**0.0000**	**1,419.6656**	**1,419.6656**	**0.4298**	**0.0000**	**1,430.4109**

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					
2019	0.3718	2.6494	8.8200	0.0143	0.0786	0.1549	0.2335	0.0185	0.1439	0.1625	0.0000	1,419.6656	1,419.6656	0.4298	0.0000	1,430.4109
Maximum	**0.3718**	**2.6494**	**8.8200**	**0.0143**	**0.0786**	**0.1549**	**0.2335**	**0.0185**	**0.1439**	**0.1625**	**0.0000**	**1,419.6656**	**1,419.6656**	**0.4298**	**0.0000**	**1,430.4109**

	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	**62.90**	**75.37**	**-12.23**	**0.00**	**22.71**	**70.27**	**62.50**	**11.89**	**69.97**	**67.52**	**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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	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	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	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	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	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	Grading	Grading	4/1/2019	4/29/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Rubber Tired Dozers	0	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37

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
Grading	3	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2019

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					0.0379	0.0000	0.0379	4.0900e-003	0.0000	4.0900e-003			0.0000			0.0000
Off-Road	0.9685	10.7341	7.5711	0.0137		0.5205	0.5205		0.4789	0.4789		1,351.4353	1,351.4353	0.4276		1,362.1248
Total	**0.9685**	**10.7341**	**7.5711**	**0.0137**	**0.0379**	**0.5205**	**0.5584**	**4.0900e-003**	**0.4789**	**0.4830**		**1,351.4353**	**1,351.4353**	**0.4276**		**1,362.1248**

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	0.0336	0.0217	0.2878	6.9000e-004	0.0639	4.3000e-004	0.0643	0.0169	4.0000e-004	0.0173		68.2304	68.2304	2.2300e-003		68.2861
Total	**0.0336**	**0.0217**	**0.2878**	**6.9000e-004**	**0.0639**	**4.3000e-004**	**0.0643**	**0.0169**	**4.0000e-004**	**0.0173**		**68.2304**	**68.2304**	**2.2300e-003**		**68.2861**

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					0.0148	0.0000	0.0148	1.5900e-003	0.0000	1.5900e-003			0.0000			0.0000
Off-Road	0.3381	2.6277	8.5322	0.0137		0.1545	0.1545		0.1435	0.1435	0.0000	1,351.4353	1,351.4353	0.4276		1,362.1248
Total	**0.3381**	**2.6277**	**8.5322**	**0.0137**	**0.0148**	**0.1545**	**0.1692**	**1.5900e-003**	**0.1435**	**0.1451**	**0.0000**	**1,351.4353**	**1,351.4353**	**0.4276**		**1,362.1248**

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	0.0336	0.0217	0.2878	6.9000e-004	0.0639	4.3000e-004	0.0643	0.0169	4.0000e-004	0.0173		68.2304	68.2304	2.2300e-003		68.2861
Total	**0.0336**	**0.0217**	**0.2878**	**6.9000e-004**	**0.0639**	**4.3000e-004**	**0.0643**	**0.0169**	**4.0000e-004**	**0.0173**		**68.2304**	**68.2304**	**2.2300e-003**		**68.2861**

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	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
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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	14.70	6.60	6.60	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
User Defined Industrial	0.536797	0.037585	0.197028	0.120041	0.024345	0.005886	0.021550	0.045582	0.001665	0.001824	0.005876	0.000790	0.001030

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					
User Defined Industrial	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					
User Defined Industrial	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

	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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

DWR SDDER Site 47 Barge

Sacramento Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	4			**Operational Year**	2021
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 - asume 1 acre for site

Construction Phase - 4 week construction period

Off-road Equipment - equipment for in water work derived from PD

Trips and VMT -

Construction Off-road Equipment Mitigation - Mitigate with Tier 4

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	0.75
tblLandUse	LandUseSquareFeet	0.00	43,560.00
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	8.00	5.00

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					
2019	0.0118	0.1271	0.0931	1.7000e-004	1.1400e-003	6.2200e-003	7.3600e-003	2.3000e-004	5.7200e-003	5.9500e-003	0.0000	15.1431	15.1431	4.6100e-003	0.0000	15.2583
Maximum	**0.0118**	**0.1271**	**0.0931**	**1.7000e-004**	**1.1400e-003**	**6.2200e-003**	**7.3600e-003**	**2.3000e-004**	**5.7200e-003**	**5.9500e-003**	**0.0000**	**15.1431**	**15.1431**	**4.6100e-003**	**0.0000**	**15.2583**

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					
2019	4.5700e-003	0.0339	0.1042	1.7000e-004	8.8000e-004	2.0100e-003	2.8800e-003	2.1000e-004	1.8600e-003	2.0700e-003	0.0000	15.1431	15.1431	4.6100e-003	0.0000	15.2583
Maximum	**4.5700e-003**	**0.0339**	**0.1042**	**1.7000e-004**	**8.8000e-004**	**2.0100e-003**	**2.8800e-003**	**2.1000e-004**	**1.8600e-003**	**2.0700e-003**	**0.0000**	**15.1431**	**15.1431**	**4.6100e-003**	**0.0000**	**15.2583**

	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	**61.34**	**73.36**	**-11.86**	**0.00**	**22.81**	**67.68**	**60.87**	**8.70**	**67.48**	**65.21**	**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	**4-1-2019**	**6-30-2019**	0.1337	0.0370
		Highest	0.1337	0.0370

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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	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
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	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	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
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	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

	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	Grading	Grading	4/1/2019	5/1/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Rubber Tired Dozers	0	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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
Grading	3	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2019

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					4.4000e-004	0.0000	4.4000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0115	0.1268	0.0904	1.6000e-004		6.2100e-003	6.2100e-003		5.7100e-003	5.7100e-003	0.0000	14.5001	14.5001	4.5900e-003	0.0000	14.6148
Total	**0.0115**	**0.1268**	**0.0904**	**1.6000e-004**	**4.4000e-004**	**6.2100e-003**	**6.6500e-003**	**5.0000e-005**	**5.7100e-003**	**5.7600e-003**	**0.0000**	**14.5001**	**14.5001**	**4.5900e-003**	**0.0000**	**14.6148**

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	3.5000e-004	2.8000e-004	2.7600e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6430	0.6430	2.0000e-005	0.0000	0.6435
Total	**3.5000e-004**	**2.8000e-004**	**2.7600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6430**	**0.6430**	**2.0000e-005**	**0.0000**	**0.6435**

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					1.7000e-004	0.0000	1.7000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.2200e-003	0.0336	0.1014	1.6000e-004		2.0000e-003	2.0000e-003		1.8600e-003	1.8600e-003	0.0000	14.5001	14.5001	4.5900e-003	0.0000	14.6148
Total	**4.2200e-003**	**0.0336**	**0.1014**	**1.6000e-004**	**1.7000e-004**	**2.0000e-003**	**2.1700e-003**	**2.0000e-005**	**1.8600e-003**	**1.8800e-003**	**0.0000**	**14.5001**	**14.5001**	**4.5900e-003**	**0.0000**	**14.6148**

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	3.5000e-004	2.8000e-004	2.7600e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6430	0.6430	2.0000e-005	0.0000	0.6435
Total	**3.5000e-004**	**2.8000e-004**	**2.7600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6430**	**0.6430**	**2.0000e-005**	**0.0000**	**0.6435**

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	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
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	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	14.70	6.60	6.60	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
User Defined Industrial	0.536797	0.037585	0.197028	0.120041	0.024345	0.005886	0.021550	0.045582	0.001665	0.001824	0.005876	0.000790	0.001030

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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					
User Defined Industrial	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					
User Defined Industrial	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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	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

DWR SDDER Site 47 Barge

Sacramento Valley Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	4			**Operational Year**	2021
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 - asume 1 acre for site

Construction Phase - 4 week construction period

Off-road Equipment - equipment for in water work derived from PD

Trips and VMT -

Construction Off-road Equipment Mitigation - Mitigate with Tier 4

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	0.75
tblLandUse	LandUseSquareFeet	0.00	43,560.00
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	8.00	5.00

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					
2019	1.0312	11.0479	8.1467	0.0147	0.1018	0.5404	0.6422	0.0210	0.4972	0.5182	0.0000	1,458.1084	1,458.1084	0.4420	0.0000	1,469.1577
Maximum	**1.0312**	**11.0479**	**8.1467**	**0.0147**	**0.1018**	**0.5404**	**0.6422**	**0.0210**	**0.4972**	**0.5182**	**0.0000**	**1,458.1084**	**1,458.1084**	**0.4420**	**0.0000**	**1,469.1577**

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					
2019	0.4009	2.9416	9.1078	0.0147	0.0786	0.1744	0.2530	0.0185	0.1619	0.1804	0.0000	1,458.1084	1,458.1084	0.4420	0.0000	1,469.1577
Maximum	**0.4009**	**2.9416**	**9.1078**	**0.0147**	**0.0786**	**0.1744**	**0.2530**	**0.0185**	**0.1619**	**0.1804**	**0.0000**	**1,458.1084**	**1,458.1084**	**0.4420**	**0.0000**	**1,469.1577**

	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	**61.13**	**73.37**	**-11.80**	**0.00**	**22.71**	**67.73**	**60.60**	**11.89**	**67.44**	**65.19**	**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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	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	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	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	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	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	Grading	Grading	4/1/2019	5/1/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Rubber Tired Dozers	0	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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
Grading	3	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2019

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					0.0379	0.0000	0.0379	4.0900e-003	0.0000	4.0900e-003			0.0000			0.0000
Off-Road	0.9976	11.0262	7.8589	0.0140		0.5400	0.5400		0.4968	0.4968		1,389.8780	1,389.8780	0.4397		1,400.8716
Total	**0.9976**	**11.0262**	**7.8589**	**0.0140**	**0.0379**	**0.5400**	**0.5779**	**4.0900e-003**	**0.4968**	**0.5009**		**1,389.8780**	**1,389.8780**	**0.4397**		**1,400.8716**

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	0.0336	0.0217	0.2878	6.9000e-004	0.0639	4.3000e-004	0.0643	0.0169	4.0000e-004	0.0173		68.2304	68.2304	2.2300e-003		68.2861
Total	**0.0336**	**0.0217**	**0.2878**	**6.9000e-004**	**0.0639**	**4.3000e-004**	**0.0643**	**0.0169**	**4.0000e-004**	**0.0173**		**68.2304**	**68.2304**	**2.2300e-003**		**68.2861**

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					0.0148	0.0000	0.0148	1.5900e-003	0.0000	1.5900e-003			0.0000			0.0000
Off-Road	0.3672	2.9199	8.8200	0.0140		0.1740	0.1740		0.1615	0.1615	0.0000	1,389.8780	1,389.8780	0.4397		1,400.8716
Total	**0.3672**	**2.9199**	**8.8200**	**0.0140**	**0.0148**	**0.1740**	**0.1887**	**1.5900e-003**	**0.1615**	**0.1631**	**0.0000**	**1,389.8780**	**1,389.8780**	**0.4397**		**1,400.8716**

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	0.0336	0.0217	0.2878	6.9000e-004	0.0639	4.3000e-004	0.0643	0.0169	4.0000e-004	0.0173		68.2304	68.2304	2.2300e-003		68.2861
Total	**0.0336**	**0.0217**	**0.2878**	**6.9000e-004**	**0.0639**	**4.3000e-004**	**0.0643**	**0.0169**	**4.0000e-004**	**0.0173**		**68.2304**	**68.2304**	**2.2300e-003**		**68.2861**

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	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
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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	14.70	6.60	6.60	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
User Defined Industrial	0.536797	0.037585	0.197028	0.120041	0.024345	0.005886	0.021550	0.045582	0.001665	0.001824	0.005876	0.000790	0.001030

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					
User Defined Industrial	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					
User Defined Industrial	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

	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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

DWR SDDER Site 48 Barge

Sacramento Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	4			**Operational Year**	2021
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 - asume 1 acre for site

Construction Phase - 4 week construction period

Off-road Equipment - equipment for in water work derived from PD

Trips and VMT -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	0.75
tblLandUse	LandUseSquareFeet	0.00	43,560.00

tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	8.00	5.00

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					
2019	0.0108	0.1160	0.0850	1.5000e-004	1.0400e-003	5.6700e-003	6.7200e-003	2.1000e-004	5.2200e-003	5.4400e-003	0.0000	13.8263	13.8263	4.2100e-003	0.0000	13.9315
Maximum	**0.0108**	**0.1160**	**0.0850**	**1.5000e-004**	**1.0400e-003**	**5.6700e-003**	**6.7200e-003**	**2.1000e-004**	**5.2200e-003**	**5.4400e-003**	**0.0000**	**13.8263**	**13.8263**	**4.2100e-003**	**0.0000**	**13.9315**

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					
2019	0.0108	0.1160	0.0850	1.5000e-004	1.0400e-003	5.6700e-003	6.7200e-003	2.1000e-004	5.2200e-003	5.4400e-003	0.0000	13.8263	13.8263	4.2100e-003	0.0000	13.9315
Maximum	**0.0108**	**0.1160**	**0.0850**	**1.5000e-004**	**1.0400e-003**	**5.6700e-003**	**6.7200e-003**	**2.1000e-004**	**5.2200e-003**	**5.4400e-003**	**0.0000**	**13.8263**	**13.8263**	**4.2100e-003**	**0.0000**	**13.9315**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**4-1-2019**	**6-30-2019**	0.1251	0.1251
		Highest	0.1251	0.1251

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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	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
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	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	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
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	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

	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	Grading	Grading	4/1/2019	4/29/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	6.00	187	0.41

Grading	Rubber Tired Dozers	0	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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
Grading	3	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 2019

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					4.0000e-004	0.0000	4.0000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.1158	0.0825	1.5000e-004		5.6700e-003	5.6700e-003		5.2200e-003	5.2200e-003	0.0000	13.2392	13.2392	4.1900e-003	0.0000	13.3439
Total	**0.0105**	**0.1158**	**0.0825**	**1.5000e-004**	**4.0000e-004**	**5.6700e-003**	**6.0700e-003**	**4.0000e-005**	**5.2200e-003**	**5.2600e-003**	**0.0000**	**13.2392**	**13.2392**	**4.1900e-003**	**0.0000**	**13.3439**

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	3.2000e-004	2.5000e-004	2.5200e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5871	0.5871	2.0000e-005	0.0000	0.5876
Total	**3.2000e-004**	**2.5000e-004**	**2.5200e-003**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**6.5000e-004**	**1.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5871**	**0.5871**	**2.0000e-005**	**0.0000**	**0.5876**

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					4.0000e-004	0.0000	4.0000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.1158	0.0825	1.5000e-004		5.6700e-003	5.6700e-003		5.2200e-003	5.2200e-003	0.0000	13.2392	13.2392	4.1900e-003	0.0000	13.3439
Total	**0.0105**	**0.1158**	**0.0825**	**1.5000e-004**	**4.0000e-004**	**5.6700e-003**	**6.0700e-003**	**4.0000e-005**	**5.2200e-003**	**5.2600e-003**	**0.0000**	**13.2392**	**13.2392**	**4.1900e-003**	**0.0000**	**13.3439**

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	3.2000e-004	2.5000e-004	2.5200e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5871	0.5871	2.0000e-005	0.0000	0.5876
Total	**3.2000e-004**	**2.5000e-004**	**2.5200e-003**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**6.5000e-004**	**1.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5871**	**0.5871**	**2.0000e-005**	**0.0000**	**0.5876**

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	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
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	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	14.70	6.60	6.60	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
User Defined Industrial	0.536797	0.037585	0.197028	0.120041	0.024345	0.005886	0.021550	0.045582	0.001665	0.001824	0.005876	0.000790	0.001030

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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					
User Defined Industrial	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					
User Defined Industrial	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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	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

DWR SDDER Site 48 Barge

Sacramento Valley Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	4			**Operational Year**	2021
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 - asume 1 acre for site

Construction Phase - 4 week construction period

Off-road Equipment - equipment for in water work derived from PD

Trips and VMT -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	0.75
tblLandUse	LandUseSquareFeet	0.00	43,560.00

tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	8.00	5.00

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					
2019	1.0312	11.0479	8.1467	0.0147	0.1018	0.5404	0.6422	0.0210	0.4972	0.5182	0.0000	1,458.1084	1,458.1084	0.4420	0.0000	1,469.1577
Maximum	**1.0312**	**11.0479**	**8.1467**	**0.0147**	**0.1018**	**0.5404**	**0.6422**	**0.0210**	**0.4972**	**0.5182**	**0.0000**	**1,458.1084**	**1,458.1084**	**0.4420**	**0.0000**	**1,469.1577**

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					
2019	1.0312	11.0479	8.1467	0.0147	0.1018	0.5404	0.6422	0.0210	0.4972	0.5182	0.0000	1,458.1084	1,458.1084	0.4420	0.0000	1,469.1577
Maximum	**1.0312**	**11.0479**	**8.1467**	**0.0147**	**0.1018**	**0.5404**	**0.6422**	**0.0210**	**0.4972**	**0.5182**	**0.0000**	**1,458.1084**	**1,458.1084**	**0.4420**	**0.0000**	**1,469.1577**

	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**

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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	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	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	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	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	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	Grading	Grading	4/1/2019	4/29/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Rubber Tired Dozers	0	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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
Grading	3	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 2019

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					0.0379	0.0000	0.0379	4.0900e-003	0.0000	4.0900e-003			0.0000			0.0000
Off-Road	0.9976	11.0262	7.8589	0.0140		0.5400	0.5400		0.4968	0.4968		1,389.8780	1,389.8780	0.4397		1,400.8716
Total	**0.9976**	**11.0262**	**7.8589**	**0.0140**	**0.0379**	**0.5400**	**0.5779**	**4.0900e-003**	**0.4968**	**0.5009**		**1,389.8780**	**1,389.8780**	**0.4397**		**1,400.8716**

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	0.0336	0.0217	0.2878	6.9000e-004	0.0639	4.3000e-004	0.0643	0.0169	4.0000e-004	0.0173		68.2304	68.2304	2.2300e-003		68.2861
Total	**0.0336**	**0.0217**	**0.2878**	**6.9000e-004**	**0.0639**	**4.3000e-004**	**0.0643**	**0.0169**	**4.0000e-004**	**0.0173**		**68.2304**	**68.2304**	**2.2300e-003**		**68.2861**

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					0.0379	0.0000	0.0379	4.0900e-003	0.0000	4.0900e-003			0.0000			0.0000
Off-Road	0.9976	11.0262	7.8589	0.0140		0.5400	0.5400		0.4968	0.4968	0.0000	1,389.8780	1,389.8780	0.4397		1,400.8716
Total	**0.9976**	**11.0262**	**7.8589**	**0.0140**	**0.0379**	**0.5400**	**0.5779**	**4.0900e-003**	**0.4968**	**0.5009**	**0.0000**	**1,389.8780**	**1,389.8780**	**0.4397**		**1,400.8716**

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	0.0336	0.0217	0.2878	6.9000e-004	0.0639	4.3000e-004	0.0643	0.0169	4.0000e-004	0.0173		68.2304	68.2304	2.2300e-003		68.2861
Total	**0.0336**	**0.0217**	**0.2878**	**6.9000e-004**	**0.0639**	**4.3000e-004**	**0.0643**	**0.0169**	**4.0000e-004**	**0.0173**		**68.2304**	**68.2304**	**2.2300e-003**		**68.2861**

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	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
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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	14.70	6.60	6.60	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
User Defined Industrial	0.536797	0.037585	0.197028	0.120041	0.024345	0.005886	0.021550	0.045582	0.001665	0.001824	0.005876	0.000790	0.001030

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					
User Defined Industrial	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					

User Defined Industrial	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

	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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

DWR SDDER Site 58 Barge

Sacramento Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	4			**Operational Year**	2021
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 - asume 1 acre for site

Construction Phase - 4 week construction period

Off-road Equipment - equipment for in water work derived from PD

Trips and VMT -

Construction Off-road Equipment Mitigation - Mitigate with Tier 4

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	0.75
tblLandUse	LandUseSquareFeet	0.00	43,560.00
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	8.00	5.00

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					
2019	0.0108	0.1160	0.0850	1.5000e-004	1.0400e-003	5.6700e-003	6.7200e-003	2.1000e-004	5.2200e-003	5.4400e-003	0.0000	13.8263	13.8263	4.2100e-003	0.0000	13.9315
Maximum	**0.0108**	**0.1160**	**0.0850**	**1.5000e-004**	**1.0400e-003**	**5.6700e-003**	**6.7200e-003**	**2.1000e-004**	**5.2200e-003**	**5.4400e-003**	**0.0000**	**13.8263**	**13.8263**	**4.2100e-003**	**0.0000**	**13.9315**

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					
2019	4.1700e-003	0.0309	0.0951	1.5000e-004	8.0000e-004	1.8300e-003	2.6300e-003	1.9000e-004	1.7000e-003	1.8900e-003	0.0000	13.8263	13.8263	4.2100e-003	0.0000	13.9315
Maximum	**4.1700e-003**	**0.0309**	**0.0951**	**1.5000e-004**	**8.0000e-004**	**1.8300e-003**	**2.6300e-003**	**1.9000e-004**	**1.7000e-003**	**1.8900e-003**	**0.0000**	**13.8263**	**13.8263**	**4.2100e-003**	**0.0000**	**13.9315**

	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	**61.35**	**73.36**	**-11.87**	**0.00**	**23.08**	**67.72**	**60.86**	**9.52**	**67.43**	**65.26**	**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	**4-1-2019**	**6-30-2019**	0.1251	0.0346
		Highest	0.1251	0.0346

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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	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
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	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	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
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	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

	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	Grading	Grading	4/1/2019	4/29/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Rubber Tired Dozers	0	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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
Grading	3	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2019

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					4.0000e-004	0.0000	4.0000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.1158	0.0825	1.5000e-004		5.6700e-003	5.6700e-003		5.2200e-003	5.2200e-003	0.0000	13.2392	13.2392	4.1900e-003	0.0000	13.3439
Total	**0.0105**	**0.1158**	**0.0825**	**1.5000e-004**	**4.0000e-004**	**5.6700e-003**	**6.0700e-003**	**4.0000e-005**	**5.2200e-003**	**5.2600e-003**	**0.0000**	**13.2392**	**13.2392**	**4.1900e-003**	**0.0000**	**13.3439**

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	3.2000e-004	2.5000e-004	2.5200e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5871	0.5871	2.0000e-005	0.0000	0.5876
Total	**3.2000e-004**	**2.5000e-004**	**2.5200e-003**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**6.5000e-004**	**1.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5871**	**0.5871**	**2.0000e-005**	**0.0000**	**0.5876**

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					1.6000e-004	0.0000	1.6000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8600e-003	0.0307	0.0926	1.5000e-004		1.8300e-003	1.8300e-003		1.7000e-003	1.7000e-003	0.0000	13.2392	13.2392	4.1900e-003	0.0000	13.3439
Total	**3.8600e-003**	**0.0307**	**0.0926**	**1.5000e-004**	**1.6000e-004**	**1.8300e-003**	**1.9900e-003**	**2.0000e-005**	**1.7000e-003**	**1.7200e-003**	**0.0000**	**13.2392**	**13.2392**	**4.1900e-003**	**0.0000**	**13.3439**

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	3.2000e-004	2.5000e-004	2.5200e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5871	0.5871	2.0000e-005	0.0000	0.5876
Total	**3.2000e-004**	**2.5000e-004**	**2.5200e-003**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**6.5000e-004**	**1.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5871**	**0.5871**	**2.0000e-005**	**0.0000**	**0.5876**

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	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
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	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	14.70	6.60	6.60	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
User Defined Industrial	0.536797	0.037585	0.197028	0.120041	0.024345	0.005886	0.021550	0.045582	0.001665	0.001824	0.005876	0.000790	0.001030

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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					
User Defined Industrial	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					
User Defined Industrial	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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	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

DWR SDDER Site 58 Barge

Sacramento Valley Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	4			**Operational Year**	2021
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 - asume 1 acre for site

Construction Phase - 4 week construction period

Off-road Equipment - equipment for in water work derived from PD

Trips and VMT -

Construction Off-road Equipment Mitigation - Mitigate with Tier 4

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	0.75
tblLandUse	LandUseSquareFeet	0.00	43,560.00
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	8.00	5.00

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					
2019	1.0312	11.0479	8.1467	0.0147	0.1018	0.5404	0.6422	0.0210	0.4972	0.5182	0.0000	1,458.1084	1,458.1084	0.4420	0.0000	1,469.1577
Maximum	**1.0312**	**11.0479**	**8.1467**	**0.0147**	**0.1018**	**0.5404**	**0.6422**	**0.0210**	**0.4972**	**0.5182**	**0.0000**	**1,458.1084**	**1,458.1084**	**0.4420**	**0.0000**	**1,469.1577**

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					
2019	0.4009	2.9416	9.1078	0.0147	0.0786	0.1744	0.2530	0.0185	0.1619	0.1804	0.0000	1,458.1084	1,458.1084	0.4420	0.0000	1,469.1577
Maximum	**0.4009**	**2.9416**	**9.1078**	**0.0147**	**0.0786**	**0.1744**	**0.2530**	**0.0185**	**0.1619**	**0.1804**	**0.0000**	**1,458.1084**	**1,458.1084**	**0.4420**	**0.0000**	**1,469.1577**

	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	**61.13**	**73.37**	**-11.80**	**0.00**	**22.71**	**67.73**	**60.60**	**11.89**	**67.44**	**65.19**	**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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	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	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	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	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	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	Grading	Grading	4/1/2019	4/29/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Rubber Tired Dozers	0	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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
Grading	3	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2019

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					0.0379	0.0000	0.0379	4.0900e-003	0.0000	4.0900e-003			0.0000			0.0000
Off-Road	0.9976	11.0262	7.8589	0.0140		0.5400	0.5400		0.4968	0.4968		1,389.8780	1,389.8780	0.4397		1,400.8716
Total	**0.9976**	**11.0262**	**7.8589**	**0.0140**	**0.0379**	**0.5400**	**0.5779**	**4.0900e-003**	**0.4968**	**0.5009**		**1,389.8780**	**1,389.8780**	**0.4397**		**1,400.8716**

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	0.0336	0.0217	0.2878	6.9000e-004	0.0639	4.3000e-004	0.0643	0.0169	4.0000e-004	0.0173		68.2304	68.2304	2.2300e-003		68.2861
Total	**0.0336**	**0.0217**	**0.2878**	**6.9000e-004**	**0.0639**	**4.3000e-004**	**0.0643**	**0.0169**	**4.0000e-004**	**0.0173**		**68.2304**	**68.2304**	**2.2300e-003**		**68.2861**

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					0.0148	0.0000	0.0148	1.5900e-003	0.0000	1.5900e-003			0.0000			0.0000
Off-Road	0.3672	2.9199	8.8200	0.0140		0.1740	0.1740		0.1615	0.1615	0.0000	1,389.8780	1,389.8780	0.4397		1,400.8716
Total	**0.3672**	**2.9199**	**8.8200**	**0.0140**	**0.0148**	**0.1740**	**0.1887**	**1.5900e-003**	**0.1615**	**0.1631**	**0.0000**	**1,389.8780**	**1,389.8780**	**0.4397**		**1,400.8716**

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	0.0336	0.0217	0.2878	6.9000e-004	0.0639	4.3000e-004	0.0643	0.0169	4.0000e-004	0.0173		68.2304	68.2304	2.2300e-003		68.2861
Total	**0.0336**	**0.0217**	**0.2878**	**6.9000e-004**	**0.0639**	**4.3000e-004**	**0.0643**	**0.0169**	**4.0000e-004**	**0.0173**		**68.2304**	**68.2304**	**2.2300e-003**		**68.2861**

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	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
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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	14.70	6.60	6.60	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
User Defined Industrial	0.536797	0.037585	0.197028	0.120041	0.024345	0.005886	0.021550	0.045582	0.001665	0.001824	0.005876	0.000790	0.001030

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					
User Defined Industrial	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					
User Defined Industrial	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

	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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

DWR SDDER Site 59 Barge

Sacramento Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	4			**Operational Year**	2021
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 - asume 1 acre for site

Construction Phase - 4 week construction period

Off-road Equipment - equipment for in water work derived from PD

Trips and VMT -

Construction Off-road Equipment Mitigation - Mitigate with Tier 4

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	0.75
tblLandUse	LandUseSquareFeet	0.00	43,560.00
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	8.00	5.00

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					
2019	0.0108	0.1160	0.0850	1.5000e-004	1.0400e-003	5.6700e-003	6.7200e-003	2.1000e-004	5.2200e-003	5.4400e-003	0.0000	13.8263	13.8263	4.2100e-003	0.0000	13.9315
Maximum	**0.0108**	**0.1160**	**0.0850**	**1.5000e-004**	**1.0400e-003**	**5.6700e-003**	**6.7200e-003**	**2.1000e-004**	**5.2200e-003**	**5.4400e-003**	**0.0000**	**13.8263**	**13.8263**	**4.2100e-003**	**0.0000**	**13.9315**

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					
2019	4.1700e-003	0.0309	0.0951	1.5000e-004	8.0000e-004	1.8300e-003	2.6300e-003	1.9000e-004	1.7000e-003	1.8900e-003	0.0000	13.8263	13.8263	4.2100e-003	0.0000	13.9315
Maximum	**4.1700e-003**	**0.0309**	**0.0951**	**1.5000e-004**	**8.0000e-004**	**1.8300e-003**	**2.6300e-003**	**1.9000e-004**	**1.7000e-003**	**1.8900e-003**	**0.0000**	**13.8263**	**13.8263**	**4.2100e-003**	**0.0000**	**13.9315**

	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	**61.35**	**73.36**	**-11.87**	**0.00**	**23.08**	**67.72**	**60.86**	**9.52**	**67.43**	**65.26**	**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	**4-1-2019**	**6-30-2019**	0.1251	0.0346
		Highest	0.1251	0.0346

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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	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
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	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	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
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	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

	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	Grading	Grading	4/1/2019	4/29/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Rubber Tired Dozers	0	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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
Grading	3	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2019

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					4.0000e-004	0.0000	4.0000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.1158	0.0825	1.5000e-004		5.6700e-003	5.6700e-003		5.2200e-003	5.2200e-003	0.0000	13.2392	13.2392	4.1900e-003	0.0000	13.3439
Total	**0.0105**	**0.1158**	**0.0825**	**1.5000e-004**	**4.0000e-004**	**5.6700e-003**	**6.0700e-003**	**4.0000e-005**	**5.2200e-003**	**5.2600e-003**	**0.0000**	**13.2392**	**13.2392**	**4.1900e-003**	**0.0000**	**13.3439**

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	3.2000e-004	2.5000e-004	2.5200e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5871	0.5871	2.0000e-005	0.0000	0.5876
Total	**3.2000e-004**	**2.5000e-004**	**2.5200e-003**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**6.5000e-004**	**1.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5871**	**0.5871**	**2.0000e-005**	**0.0000**	**0.5876**

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					1.6000e-004	0.0000	1.6000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8600e-003	0.0307	0.0926	1.5000e-004		1.8300e-003	1.8300e-003		1.7000e-003	1.7000e-003	0.0000	13.2392	13.2392	4.1900e-003	0.0000	13.3439
Total	**3.8600e-003**	**0.0307**	**0.0926**	**1.5000e-004**	**1.6000e-004**	**1.8300e-003**	**1.9900e-003**	**2.0000e-005**	**1.7000e-003**	**1.7200e-003**	**0.0000**	**13.2392**	**13.2392**	**4.1900e-003**	**0.0000**	**13.3439**

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	3.2000e-004	2.5000e-004	2.5200e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5871	0.5871	2.0000e-005	0.0000	0.5876
Total	**3.2000e-004**	**2.5000e-004**	**2.5200e-003**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**6.5000e-004**	**1.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5871**	**0.5871**	**2.0000e-005**	**0.0000**	**0.5876**

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	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
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	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	14.70	6.60	6.60	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
User Defined Industrial	0.536797	0.037585	0.197028	0.120041	0.024345	0.005886	0.021550	0.045582	0.001665	0.001824	0.005876	0.000790	0.001030

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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					
User Defined Industrial	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					
User Defined Industrial	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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	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

DWR SDDER Site 59 Barge

Sacramento Valley Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	4			**Operational Year**	2021
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 - asume 1 acre for site

Construction Phase - 4 week construction period

Off-road Equipment - equipment for in water work derived from PD

Trips and VMT -

Construction Off-road Equipment Mitigation - Mitigate with Tier 4

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	0.75
tblLandUse	LandUseSquareFeet	0.00	43,560.00
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	8.00	5.00

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					
2019	1.0312	11.0479	8.1467	0.0147	0.1018	0.5404	0.6422	0.0210	0.4972	0.5182	0.0000	1,458.1084	1,458.1084	0.4420	0.0000	1,469.1577
Maximum	**1.0312**	**11.0479**	**8.1467**	**0.0147**	**0.1018**	**0.5404**	**0.6422**	**0.0210**	**0.4972**	**0.5182**	**0.0000**	**1,458.1084**	**1,458.1084**	**0.4420**	**0.0000**	**1,469.1577**

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					
2019	0.4009	2.9416	9.1078	0.0147	0.0786	0.1744	0.2530	0.0185	0.1619	0.1804	0.0000	1,458.1084	1,458.1084	0.4420	0.0000	1,469.1577
Maximum	**0.4009**	**2.9416**	**9.1078**	**0.0147**	**0.0786**	**0.1744**	**0.2530**	**0.0185**	**0.1619**	**0.1804**	**0.0000**	**1,458.1084**	**1,458.1084**	**0.4420**	**0.0000**	**1,469.1577**

	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	**61.13**	**73.37**	**-11.80**	**0.00**	**22.71**	**67.73**	**60.60**	**11.89**	**67.44**	**65.19**	**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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	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	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	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	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	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	Grading	Grading	4/1/2019	4/29/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Rubber Tired Dozers	0	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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
Grading	3	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2019

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					0.0379	0.0000	0.0379	4.0900e-003	0.0000	4.0900e-003			0.0000			0.0000
Off-Road	0.9976	11.0262	7.8589	0.0140		0.5400	0.5400		0.4968	0.4968		1,389.8780	1,389.8780	0.4397		1,400.8716
Total	**0.9976**	**11.0262**	**7.8589**	**0.0140**	**0.0379**	**0.5400**	**0.5779**	**4.0900e-003**	**0.4968**	**0.5009**		**1,389.8780**	**1,389.8780**	**0.4397**		**1,400.8716**

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	0.0336	0.0217	0.2878	6.9000e-004	0.0639	4.3000e-004	0.0643	0.0169	4.0000e-004	0.0173		68.2304	68.2304	2.2300e-003		68.2861
Total	**0.0336**	**0.0217**	**0.2878**	**6.9000e-004**	**0.0639**	**4.3000e-004**	**0.0643**	**0.0169**	**4.0000e-004**	**0.0173**		**68.2304**	**68.2304**	**2.2300e-003**		**68.2861**

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					0.0148	0.0000	0.0148	1.5900e-003	0.0000	1.5900e-003			0.0000			0.0000
Off-Road	0.3672	2.9199	8.8200	0.0140		0.1740	0.1740		0.1615	0.1615	0.0000	1,389.8780	1,389.8780	0.4397		1,400.8716
Total	**0.3672**	**2.9199**	**8.8200**	**0.0140**	**0.0148**	**0.1740**	**0.1887**	**1.5900e-003**	**0.1615**	**0.1631**	**0.0000**	**1,389.8780**	**1,389.8780**	**0.4397**		**1,400.8716**

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	0.0336	0.0217	0.2878	6.9000e-004	0.0639	4.3000e-004	0.0643	0.0169	4.0000e-004	0.0173		68.2304	68.2304	2.2300e-003		68.2861
Total	**0.0336**	**0.0217**	**0.2878**	**6.9000e-004**	**0.0639**	**4.3000e-004**	**0.0643**	**0.0169**	**4.0000e-004**	**0.0173**		**68.2304**	**68.2304**	**2.2300e-003**		**68.2861**

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	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
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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	14.70	6.60	6.60	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
User Defined Industrial	0.536797	0.037585	0.197028	0.120041	0.024345	0.005886	0.021550	0.045582	0.001665	0.001824	0.005876	0.000790	0.001030

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					
User Defined Industrial	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					
User Defined Industrial	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

	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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

DWR SDDER Site 60

Sacramento Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	4			**Operational Year**	2021
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 - asume 1 acre for site

Construction Phase - 4 week construction period

Off-road Equipment - equipment for in water work derived from PD

Trips and VMT - Trips from AECOM

Construction Off-road Equipment Mitigation - Mitigate with Tier 4

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	0.75
tblLandUse	LandUseSquareFeet	0.00	43,560.00
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	0.00	730.00

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					
2019	0.0116	0.2019	0.0802	4.2000e-004	7.2100e-003	4.5300e-003	0.0117	1.9100e-003	4.1900e-003	6.1000e-003	0.0000	39.1767	39.1767	4.5200e-003	0.0000	39.2897
Maximum	**0.0116**	**0.2019**	**0.0802**	**4.2000e-004**	**7.2100e-003**	**4.5300e-003**	**0.0117**	**1.9100e-003**	**4.1900e-003**	**6.1000e-003**	**0.0000**	**39.1767**	**39.1767**	**4.5200e-003**	**0.0000**	**39.2897**

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					
2019	4.9800e-003	0.1168	0.0903	4.2000e-004	6.9600e-003	6.9000e-004	7.6500e-003	1.8800e-003	6.7000e-004	2.5500e-003	0.0000	39.1766	39.1766	4.5200e-003	0.0000	39.2897
Maximum	**4.9800e-003**	**0.1168**	**0.0903**	**4.2000e-004**	**6.9600e-003**	**6.9000e-004**	**7.6500e-003**	**1.8800e-003**	**6.7000e-004**	**2.5500e-003**	**0.0000**	**39.1766**	**39.1766**	**4.5200e-003**	**0.0000**	**39.2897**

	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	**57.07**	**42.15**	**-12.59**	**0.00**	**3.47**	**84.77**	**34.84**	**1.57**	**84.01**	**58.20**	**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	**4-1-2019**	**6-30-2019**	0.2072	0.1167
		Highest	0.2072	0.1167

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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	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
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	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	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
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	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

	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	Grading	Grading	4/1/2019	4/29/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Rubber Tired Dozers	0	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	0	7.00	97	0.37

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
Grading	2	5.00	0.00	730.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2019

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					4.0000e-004	0.0000	4.0000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0300e-003	0.0912	0.0583	1.1000e-004		4.0300e-003	4.0300e-003		3.7100e-003	3.7100e-003	0.0000	10.3097	10.3097	3.2600e-003	0.0000	10.3913
Total	**8.0300e-003**	**0.0912**	**0.0583**	**1.1000e-004**	**4.0000e-004**	**4.0300e-003**	**4.4300e-003**	**4.0000e-005**	**3.7100e-003**	**3.7500e-003**	**0.0000**	**10.3097**	**10.3097**	**3.2600e-003**	**0.0000**	**10.3913**

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	3.2500e-003	0.1105	0.0193	3.0000e-004	6.1600e-003	5.0000e-004	6.6600e-003	1.7000e-003	4.7000e-004	2.1700e-003	0.0000	28.2798	28.2798	1.2400e-003	0.0000	28.3108
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	3.2000e-004	2.5000e-004	2.5200e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5871	0.5871	2.0000e-005	0.0000	0.5876
Total	**3.5700e-003**	**0.1107**	**0.0218**	**3.1000e-004**	**6.8000e-003**	**5.0000e-004**	**7.3100e-003**	**1.8700e-003**	**4.7000e-004**	**2.3500e-003**	**0.0000**	**28.8669**	**28.8669**	**1.2600e-003**	**0.0000**	**28.8984**

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					1.6000e-004	0.0000	1.6000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4100e-003	6.1200e-003	0.0684	1.1000e-004		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	10.3097	10.3097	3.2600e-003	0.0000	10.3913
Total	**1.4100e-003**	**6.1200e-003**	**0.0684**	**1.1000e-004**	**1.6000e-004**	**1.9000e-004**	**3.5000e-004**	**2.0000e-005**	**1.9000e-004**	**2.1000e-004**	**0.0000**	**10.3097**	**10.3097**	**3.2600e-003**	**0.0000**	**10.3913**

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	3.2500e-003	0.1105	0.0193	3.0000e-004	6.1600e-003	5.0000e-004	6.6600e-003	1.7000e-003	4.7000e-004	2.1700e-003	0.0000	28.2798	28.2798	1.2400e-003	0.0000	28.3108
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	3.2000e-004	2.5000e-004	2.5200e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5871	0.5871	2.0000e-005	0.0000	0.5876
Total	**3.5700e-003**	**0.1107**	**0.0218**	**3.1000e-004**	**6.8000e-003**	**5.0000e-004**	**7.3100e-003**	**1.8700e-003**	**4.7000e-004**	**2.3500e-003**	**0.0000**	**28.8669**	**28.8669**	**1.2600e-003**	**0.0000**	**28.8984**

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	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
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	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	14.70	6.60	6.60	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
User Defined Industrial	0.536797	0.037585	0.197028	0.120041	0.024345	0.005886	0.021550	0.045582	0.001665	0.001824	0.005876	0.000790	0.001030

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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					
User Defined Industrial	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					
User Defined Industrial	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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	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

DWR SDDER Site 60 Barge

Sacramento Valley Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	4			**Operational Year**	2021
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 - asume 1 acre for site

Construction Phase - 4 week construction period

Off-road Equipment - equipment for in water work derived from PD

Trips and VMT -

Construction Off-road Equipment Mitigation - Mitigate with Tier 4

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	0.75
tblLandUse	LandUseSquareFeet	0.00	43,560.00
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	8.00	5.00

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					
2019	1.0021	10.7558	7.8589	0.0143	0.1018	0.5209	0.6227	0.0210	0.4793	0.5003	0.0000	1,419.6656	1,419.6656	0.4298	0.0000	1,430.4109
Maximum	**1.0021**	**10.7558**	**7.8589**	**0.0143**	**0.1018**	**0.5209**	**0.6227**	**0.0210**	**0.4793**	**0.5003**	**0.0000**	**1,419.6656**	**1,419.6656**	**0.4298**	**0.0000**	**1,430.4109**

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					
2019	0.3718	2.6494	8.8200	0.0143	0.0786	0.1549	0.2335	0.0185	0.1439	0.1625	0.0000	1,419.6656	1,419.6656	0.4298	0.0000	1,430.4109
Maximum	**0.3718**	**2.6494**	**8.8200**	**0.0143**	**0.0786**	**0.1549**	**0.2335**	**0.0185**	**0.1439**	**0.1625**	**0.0000**	**1,419.6656**	**1,419.6656**	**0.4298**	**0.0000**	**1,430.4109**

	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	**62.90**	**75.37**	**-12.23**	**0.00**	**22.71**	**70.27**	**62.50**	**11.89**	**69.97**	**67.52**	**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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	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	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	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	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	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	Grading	Grading	4/1/2019	4/29/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Rubber Tired Dozers	0	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37

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
Grading	3	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2019

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					0.0379	0.0000	0.0379	4.0900e-003	0.0000	4.0900e-003			0.0000			0.0000
Off-Road	0.9685	10.7341	7.5711	0.0137		0.5205	0.5205		0.4789	0.4789		1,351.4353	1,351.4353	0.4276		1,362.1248
Total	**0.9685**	**10.7341**	**7.5711**	**0.0137**	**0.0379**	**0.5205**	**0.5584**	**4.0900e-003**	**0.4789**	**0.4830**		**1,351.4353**	**1,351.4353**	**0.4276**		**1,362.1248**

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	0.0336	0.0217	0.2878	6.9000e-004	0.0639	4.3000e-004	0.0643	0.0169	4.0000e-004	0.0173		68.2304	68.2304	2.2300e-003		68.2861
Total	**0.0336**	**0.0217**	**0.2878**	**6.9000e-004**	**0.0639**	**4.3000e-004**	**0.0643**	**0.0169**	**4.0000e-004**	**0.0173**		**68.2304**	**68.2304**	**2.2300e-003**		**68.2861**

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					0.0148	0.0000	0.0148	1.5900e-003	0.0000	1.5900e-003			0.0000			0.0000
Off-Road	0.3381	2.6277	8.5322	0.0137		0.1545	0.1545		0.1435	0.1435	0.0000	1,351.4353	1,351.4353	0.4276		1,362.1248
Total	**0.3381**	**2.6277**	**8.5322**	**0.0137**	**0.0148**	**0.1545**	**0.1692**	**1.5900e-003**	**0.1435**	**0.1451**	**0.0000**	**1,351.4353**	**1,351.4353**	**0.4276**		**1,362.1248**

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	0.0336	0.0217	0.2878	6.9000e-004	0.0639	4.3000e-004	0.0643	0.0169	4.0000e-004	0.0173		68.2304	68.2304	2.2300e-003		68.2861
Total	**0.0336**	**0.0217**	**0.2878**	**6.9000e-004**	**0.0639**	**4.3000e-004**	**0.0643**	**0.0169**	**4.0000e-004**	**0.0173**		**68.2304**	**68.2304**	**2.2300e-003**		**68.2861**

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	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
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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	14.70	6.60	6.60	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
User Defined Industrial	0.536797	0.037585	0.197028	0.120041	0.024345	0.005886	0.021550	0.045582	0.001665	0.001824	0.005876	0.000790	0.001030

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					
User Defined Industrial	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					
User Defined Industrial	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

	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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

DWR SDDER Site 61 Barge

Sacramento Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	4			**Operational Year**	2021
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 - asume 1 acre for site

Construction Phase - 4 week construction period

Off-road Equipment - equipment for in water work derived from PD

Trips and VMT - Trips from AECOM

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	0.75
tblLandUse	LandUseSquareFeet	0.00	43,560.00

tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	8.00	5.00

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					
2019	0.0108	0.1160	0.0850	1.5000e-004	1.0400e-003	5.6700e-003	6.7200e-003	2.1000e-004	5.2200e-003	5.4400e-003	0.0000	13.8263	13.8263	4.2100e-003	0.0000	13.9315
Maximum	**0.0108**	**0.1160**	**0.0850**	**1.5000e-004**	**1.0400e-003**	**5.6700e-003**	**6.7200e-003**	**2.1000e-004**	**5.2200e-003**	**5.4400e-003**	**0.0000**	**13.8263**	**13.8263**	**4.2100e-003**	**0.0000**	**13.9315**

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					
2019	0.0108	0.1160	0.0850	1.5000e-004	1.0400e-003	5.6700e-003	6.7200e-003	2.1000e-004	5.2200e-003	5.4400e-003	0.0000	13.8263	13.8263	4.2100e-003	0.0000	13.9315
Maximum	**0.0108**	**0.1160**	**0.0850**	**1.5000e-004**	**1.0400e-003**	**5.6700e-003**	**6.7200e-003**	**2.1000e-004**	**5.2200e-003**	**5.4400e-003**	**0.0000**	**13.8263**	**13.8263**	**4.2100e-003**	**0.0000**	**13.9315**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**4-1-2019**	**6-30-2019**	0.1251	0.1251
		Highest	0.1251	0.1251

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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	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
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	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	0.0000
Mobile	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
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	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

	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	Grading	Grading	4/1/2019	4/29/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	6.00	187	0.41

Grading	Rubber Tired Dozers	0	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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
Grading	3	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 2019

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					4.0000e-004	0.0000	4.0000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.1158	0.0825	1.5000e-004		5.6700e-003	5.6700e-003		5.2200e-003	5.2200e-003	0.0000	13.2392	13.2392	4.1900e-003	0.0000	13.3439
Total	**0.0105**	**0.1158**	**0.0825**	**1.5000e-004**	**4.0000e-004**	**5.6700e-003**	**6.0700e-003**	**4.0000e-005**	**5.2200e-003**	**5.2600e-003**	**0.0000**	**13.2392**	**13.2392**	**4.1900e-003**	**0.0000**	**13.3439**

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	3.2000e-004	2.5000e-004	2.5200e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5871	0.5871	2.0000e-005	0.0000	0.5876
Total	**3.2000e-004**	**2.5000e-004**	**2.5200e-003**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**6.5000e-004**	**1.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5871**	**0.5871**	**2.0000e-005**	**0.0000**	**0.5876**

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					4.0000e-004	0.0000	4.0000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0105	0.1158	0.0825	1.5000e-004		5.6700e-003	5.6700e-003		5.2200e-003	5.2200e-003	0.0000	13.2392	13.2392	4.1900e-003	0.0000	13.3439
Total	**0.0105**	**0.1158**	**0.0825**	**1.5000e-004**	**4.0000e-004**	**5.6700e-003**	**6.0700e-003**	**4.0000e-005**	**5.2200e-003**	**5.2600e-003**	**0.0000**	**13.2392**	**13.2392**	**4.1900e-003**	**0.0000**	**13.3439**

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	3.2000e-004	2.5000e-004	2.5200e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5871	0.5871	2.0000e-005	0.0000	0.5876
Total	**3.2000e-004**	**2.5000e-004**	**2.5200e-003**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**6.5000e-004**	**1.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.5871**	**0.5871**	**2.0000e-005**	**0.0000**	**0.5876**

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	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
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	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	14.70	6.60	6.60	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
User Defined Industrial	0.536797	0.037585	0.197028	0.120041	0.024345	0.005886	0.021550	0.045582	0.001665	0.001824	0.005876	0.000790	0.001030

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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					
User Defined Industrial	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					
User Defined Industrial	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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.1903	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	0.0202					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1701					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.1903**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	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

DWR SDDER Site 61 Barge

Sacramento Valley Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	4			**Operational Year**	2021
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 - asume 1 acre for site

Construction Phase - 4 week construction period

Off-road Equipment - equipment for in water work derived from PD

Trips and VMT - Trips from AECOM

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	21.00
tblGrading	AcresOfGrading	0.00	0.75
tblLandUse	LandUseSquareFeet	0.00	43,560.00

tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	8.00	5.00

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					
2019	1.0312	11.0479	8.1467	0.0147	0.1018	0.5404	0.6422	0.0210	0.4972	0.5182	0.0000	1,458.1084	1,458.1084	0.4420	0.0000	1,469.1577
Maximum	**1.0312**	**11.0479**	**8.1467**	**0.0147**	**0.1018**	**0.5404**	**0.6422**	**0.0210**	**0.4972**	**0.5182**	**0.0000**	**1,458.1084**	**1,458.1084**	**0.4420**	**0.0000**	**1,469.1577**

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					
2019	1.0312	11.0479	8.1467	0.0147	0.1018	0.5404	0.6422	0.0210	0.4972	0.5182	0.0000	1,458.1084	1,458.1084	0.4420	0.0000	1,469.1577
Maximum	**1.0312**	**11.0479**	**8.1467**	**0.0147**	**0.1018**	**0.5404**	**0.6422**	**0.0210**	**0.4972**	**0.5182**	**0.0000**	**1,458.1084**	**1,458.1084**	**0.4420**	**0.0000**	**1,469.1577**

	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**

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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	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	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
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	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	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

	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	Grading	Grading	4/1/2019	4/29/2019	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.75

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Cranes	1	8.00	231	0.29
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	0	6.00	187	0.41
Grading	Rubber Tired Dozers	0	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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
Grading	3	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 2019

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					0.0379	0.0000	0.0379	4.0900e-003	0.0000	4.0900e-003			0.0000			0.0000
Off-Road	0.9976	11.0262	7.8589	0.0140		0.5400	0.5400		0.4968	0.4968		1,389.8780	1,389.8780	0.4397		1,400.8716
Total	**0.9976**	**11.0262**	**7.8589**	**0.0140**	**0.0379**	**0.5400**	**0.5779**	**4.0900e-003**	**0.4968**	**0.5009**		**1,389.8780**	**1,389.8780**	**0.4397**		**1,400.8716**

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	0.0336	0.0217	0.2878	6.9000e-004	0.0639	4.3000e-004	0.0643	0.0169	4.0000e-004	0.0173		68.2304	68.2304	2.2300e-003		68.2861
Total	**0.0336**	**0.0217**	**0.2878**	**6.9000e-004**	**0.0639**	**4.3000e-004**	**0.0643**	**0.0169**	**4.0000e-004**	**0.0173**		**68.2304**	**68.2304**	**2.2300e-003**		**68.2861**

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					0.0379	0.0000	0.0379	4.0900e-003	0.0000	4.0900e-003			0.0000			0.0000
Off-Road	0.9976	11.0262	7.8589	0.0140		0.5400	0.5400		0.4968	0.4968	0.0000	1,389.8780	1,389.8780	0.4397		1,400.8716
Total	**0.9976**	**11.0262**	**7.8589**	**0.0140**	**0.0379**	**0.5400**	**0.5779**	**4.0900e-003**	**0.4968**	**0.5009**	**0.0000**	**1,389.8780**	**1,389.8780**	**0.4397**		**1,400.8716**

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	0.0336	0.0217	0.2878	6.9000e-004	0.0639	4.3000e-004	0.0643	0.0169	4.0000e-004	0.0173		68.2304	68.2304	2.2300e-003		68.2861
Total	**0.0336**	**0.0217**	**0.2878**	**6.9000e-004**	**0.0639**	**4.3000e-004**	**0.0643**	**0.0169**	**4.0000e-004**	**0.0173**		**68.2304**	**68.2304**	**2.2300e-003**		**68.2861**

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	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
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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
User Defined Industrial	14.70	6.60	6.60	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
User Defined Industrial	0.536797	0.037585	0.197028	0.120041	0.024345	0.005886	0.021550	0.045582	0.001665	0.001824	0.005876	0.000790	0.001030

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					
User Defined Industrial	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					

User Defined Industrial	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

	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	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0428	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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	0.1106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9322					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.0428**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

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

3. Calculations of Marine Emissions for each repair site proposed under the for barge hauling scenario.

Construction Marine Emissions **Site 45**

Year = 2019

Duration = 84 days
Volume of Material = 190860 CY

Barge capacity = 6000 cy
scow loads = 31.81
loads/day = 0.37869
trips/day = 0.757381
Tug/scow speed = 8 knots Source : Port of Oakland Emission Inventory, 2016
9.2 miles/hour
Distance to air basin = 20 miles
Hours/trip = 2.173913 hours
Hours/day = 1.64648

Source **Work Boat**

Use = 2 hours/day

Total Useage during phase = 168 hours

Emission Rate Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model

Running	CO	ROG	NOx	PM10	PM2.5	CO2
lb/hr	0.890634	0.254863	3.031195	0.174348	0.155252	214.39

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
pound/day =	0.51	6.06	0.348696	0.310504	428.7862	1.781269
TPY =	0.02	0.25	1.46E-02	1.30E-02	18.01	0.07

Source **Barge - Main Engine**

Year = 2019

Useage = 1.64648 hour/ day

Total Useage phase = 138.3043 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	9.651398	2.439527	26.79984	1.451799	1.292786	1712.70	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
Pound/day =	4.02	44.13	2.39	2.13	2819.93	15.89084
TPY =	0.04	0.46	0.03	0.02	29.61	0.17

Source **Barge - Auxillary Engine**

Year = 2019

Useage = 1.64648 hour/ day

Total Useage phase = 138.3043 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	2.276278	0.575362	6.320731	0.342406	0.304903	403.94	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	SO2	CO
Pound/day =	0.95	10.41	0.56	0.50	665.08		3.747847
TPY =	0.01	0.11	0.01	0.01	6.98		0.04

Total Lb/day ==	**5.47**	**60.59**	**3.30**	**2.94**	**3913.80**		**21.42**
Total TPY =	**0.07**	**0.83**	**0.05**	**0.04**	**54.60**		**0.28**
Total MT CO2e =					**49.53381**		
CalEEMod =	1.03	11.05	0.64	0.52	PPD		
					15.26	TPY	
					13.84	MTY	
Total Lb/day =	**6.50**	**71.64**	**3.94**	**3.46**			
					63.38	MT CO2e	

Construction Marine Emissions **Site 45**

Year = 2019

Duration = 21 days
Volume of Material = 190860 CY

Barge capacity = 6000 cy
scow loads = 31.81
loads/day = 1.514762
trips/day = 3.029524
Tug/scow speed = 8 knots Source : Port of Oakland Emission Inventory, 2016
9.2 miles/hour
Distance to air basin = 20 miles
Hours/trip = 2.173913 hours
Hours/day = 6.585921

Source **Work Boat**

Use = 2 hours/day

Total Useage during phase = 42 hours

Emission Rate Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model

Running	CO	ROG	NOx	PM10	PM2.5	CO2
lb/hr	0.890634	0.254863	3.031195	0.174348	0.155252	214.39

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
pound/day =	0.51	6.06	0.348696	0.310504	428.7862	1.781269
TPY =	0.01	0.06	3.66E-03	3.26E-03	4.50	0.02

Source **Barge - Main Engine**

Year = 2019

Useage = 6.585921 hour/ day

Total Useage phase = 138.3043 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	9.651398	2.439527	26.79984	1.451799	1.292786	1712.70	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
Pound/day =	16.07	176.50	9.56	8.51	11279.73	63.56335
TPY =	0.17	1.85	0.10	0.09	118.44	0.67

Source **Barge - Auxillary Engine**

Year = 2019

Useage = 6.585921 hour/ day

Total Useage phase = 138.3043 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	2.276278	0.575362	6.320731	0.342406	0.304903	403.94	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	SO2	CO
Pound/day =	3.79	41.63	2.26	2.01	2660.32		14.99139
TPY =	0.04	0.44	0.02	0.02	27.93		0.16

Total Lb/day ==	**20.37**	**224.19**	**12.17**	**10.83**	**14368.84**		**80.34**
Total TPY =	**0.21**	**2.35**	**0.13**	**0.11**	**150.87**		**0.84**
Total MT CO2e =					**136.8696**		
CalEEMod =	1.03	11.05	0.64	0.52	PPD		
					15.26	TPY	
					13.84	MTY	
Total Lb/day =	**21.40**	**235.24**	**12.81**	**11.35**			
					150.71	MT CO2e	

Construction Marine Emissions **Site 46**

Year = 2019

Duration = 21 days
Volume of Material = 26920 CY

Scow capacity = 3000 cy
scow loads = 8.973333

loads/day = 0.427302
Trips/day = 0.854603
Tug/scow speed = 8 knots Source : Port of Oakland Emission Inventory, 2016
9.2 miles/hour
Distance to air basin = 25 miles
Hours/trip = 2.717391 hours
Hours/day = 2.322291

Source **Work Boat**

Use = 2 hours/day

Total Useage during phase = 42 hours

Emission Rate Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model

Running	CO	ROG	NOx	PM10	PM2.5	CO2
lb/hr	0.890634	0.254863	3.031195	0.174348	0.155252	214.39

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
pound/day =	0.51	6.06	0.348696	0.310504	428.7862	1.781269
TPY =	0.01	0.06	3.66E-03	3.26E-03	4.50	0.02

Source **Tug Boat to push/pull scow - Main Engine**

Year = 2019

Useage = 2.322291 hour/ day

Total Useage phase = 48.76812 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	9.651398	2.439527	26.79984	1.451799	1.292786	1712.70	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
Pound/day =	5.67	62.24	3.37	3.00	3977.40	22.41336
TPY =	0.06	0.65	0.04	0.03	41.76	0.24

Source **Tug Boat to push/pull scow - Auxillary Engine**

Year = 2019

Useage = 2.322291 hour/ day

Total Useage phase = 48.76812 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	2.276278	0.575362	6.320731	0.342406	0.304903	403.94	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	SO2	CO
Pound/day =	1.34	14.68	0.80	0.71	938.07		5.286181
TPY =	0.01	0.15	0.01	0.01	9.85		0.06

Total Lb/day ==	**7.51**	**82.98**	**4.52**	**4.02**	**5344.25**		**29.48**
Total TPY =	**0.08**	**0.87**	**0.05**	**0.04**	**56.11**		**0.31**
Total MT CO2e =					**50.90636**		
CalEEMod =	0.37	2.65	0.23	0.16			
					13.56	MT/year	
Total =	**7.88**	**85.63**	**4.75**	**4.18**			
					64.46636	Total MTeCO2	

Construction Marine Emissions **Site 47**

Year = 2019

Duration = 21 days
Volume of Material = 22120 CY

Scow capacity = 3000 cy
scow loads = 7.373333

loads/day = 0.351111
Trips/day = 0.702222
Tug/scow speed = 8 knots Source : Port of Oakland Emission Inventory, 2016
9.2 miles/hour
Distance to air basin = 25 miles
Hours/trip = 2.717391 hours
Hours/day = 1.908213

Source **Work Boat**

Use = 2 hours/day

Total Useage during phase = 42 hours

Emission Rate Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model

Running	CO	ROG	NOx	PM10	PM2.5	CO2
lb/hr	0.890634	0.254863	3.031195	0.174348	0.155252	214.39

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
pound/day =	0.51	6.06	0.348696	0.310504	428.7862	1.781269
TPY =	0.01	0.06	3.66E-03	3.26E-03	4.50	0.02

Source **Tug Boat to push/pull scow - Main Engine**

Year = 2019

Useage = 1.908213 hour/ day

Total Useage phase = 40.07246 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	9.651398	2.439527	26.79984	1.451799	1.292786	1712.70	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
Pound/day =	4.66	51.14	2.77	2.47	3268.20	18.41692
TPY =	0.05	0.54	0.03	0.03	34.32	0.19

Source **Tug Boat to push/pull scow - Auxillary Engine**

Year = 2019

Useage = 1.908213 hour/ day

Total Useage phase = 40.07246 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	2.276278	0.575362	6.320731	0.342406	0.304903	403.94	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	SO2	CO
Pound/day =	1.10	12.06	0.65	0.58	770.80		4.343623
TPY =	0.01	0.13	0.01	0.01	8.09		0.05

Total Lb/day ==	**6.26**	**69.26**	**3.77**	**3.36**	**4467.79**	**24.54**
Total TPY =	**0.07**	**0.73**	**0.04**	**0.04**	**46.91**	**0.26**
Total MT CO2e =					**42.55772**	
CalEEMod =	1.03	11.05	0.64	0.18	15.26	
Total Lb/day ==	7.29	80.31	4.41	3.54		
Total MT CO2e =					57.81772	

Construction Marine Emissions **Site 48**

Year = 2019

Duration = 21 days
Volume of Material = 10520 CY

Scow capacity = 3000 cy
scow loads = 3.506667

loads/day = 0.166984
Trips/day = 0.333968
Tug/scow speed = 8 knots Source : Port of Oakland Emission Inventory, 2016
9.2 miles/hour
Distance to air basin = 35 miles
Hours/trip = 3.804348 hours
Hours/day = 1.270531

Source **Work Boat**

Use = 2 hours/day

Total Useage during phase = 42 hours

Emission Rate Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model

Running	CO	ROG	NOx	PM10	PM2.5	CO2
lb/hr	0.890634	0.254863	3.031195	0.174348	0.155252	214.39

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
pound/day =	0.51	6.06	0.348696	0.310504	428.7862	1.781269
TPY =	0.01	0.06	3.66E-03	3.26E-03	4.50	0.02

Source **Tug Boat to push/pull scow - Main Engine**

Year = 2019

Useage = 1.270531 hour/ day

Total Useage phase = 26.68116 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	9.651398	2.439527	26.79984	1.451799	1.292786	1712.70	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
Pound/day =	3.10	34.05	1.84	1.64	2176.04	12.2624
TPY =	0.03	0.36	0.02	0.02	22.85	0.13

Source **Tug Boat to push/pull scow - Auxillary Engine**

Year = 2019

Useage = 1.270531 hour/ day

Total Useage phase = 26.68116 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	2.276278	0.575362	6.320731	0.342406	0.304903	403.94	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	SO2	CO
Pound/day =	0.73	8.03	0.44	0.39	513.22		2.892083
TPY =	0.01	0.08	0.00	0.00	5.39		0.03

Total Lb/day ==	**4.34**	**48.14**	**2.63**	**2.34**	**3118.05**		**16.94**
Total TPY =	**0.05**	**0.51**	**0.03**	**0.02**	**32.74**		**0.18**
Total MT CO2e =					**29.7008**		
CalEEMod =	**1.03**	**11.05**	**0.64**	**0.52**	**PPD**		
					13.93	**MTY**	
Total Lb/day ==	**5.37**	**59.19**	**3.27**	**2.86**			
			Total MT CO2e =		**43.6308**		
CalEEMod =	0.0108	0.116	0.006	0.005	TPY		
Total TPY =	0.06	0.62	0.03	0.03			

Construction Marine Emissions **Site 58**

Year = 2019

Duration = 21 days
Volume of Material = 39860 CY

Scow capacity = 3000 cy
scow loads = 13.28667

loads/day = 0.632698
Trips/day = 1.265397
Tug/scow speed = 8 knots Source : Port of Oakland Emission Inventory, 2016
9.2 miles/hour
Distance to air basin = 30 miles
Hours/trip = 3.26087 hours
Hours/day = 4.126294

Source **Work Boat**

Use = 2 hours/day

Total Useage during phase = 42 hours

Emission Rate Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model

Running	CO	ROG	NOx	PM10	PM2.5	CO2
lb/hr	0.890634	0.254863	3.031195	0.174348	0.155252	214.39

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
pound/day =	0.51	6.06	0.348696	0.310504	428.7862	1.781269
TPY =	0.01	0.06	3.66E-03	3.26E-03	4.50	0.02

Source **Tug Boat to push/pull scow - Main Engine**

Year = 2019

Useage = 4.126294 hour/ day

Total Useage phase = 86.65217 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	9.651398	2.439527	26.79984	1.451799	1.292786	1712.70	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
Pound/day =	10.07	110.58	5.99	5.33	7067.12	39.82451
TPY =	0.11	1.16	0.06	0.06	74.20	0.42

Source **Tug Boat to push/pull scow - Auxillary Engine**

Year = 2019

Useage = 4.126294 hour/ day

Total Useage phase = 86.65217 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	2.276278	0.575362	6.320731	0.342406	0.304903	403.94	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	SO2	CO
Pound/day =	2.37	26.08	1.41	1.26	1666.78		9.392593
TPY =	0.02	0.27	0.01	0.01	17.50		0.10

Total Lb/day ==	**12.95**	**142.73**	**7.75**	**6.90**	**9162.68**		**51.00**
Total TPY =	**0.14**	**1.50**	**0.08**	**0.07**	**96.21**		**0.54**
Total MT CO2e =					**87.27862**		
CalEEMod =	1.03	11.05	0.64	0.52			
					13.93	MTY	
Total Lb/day ==	13.98	153.78	8.39	7.42			
			Total MT CO2e =		101.2086		

Construction Marine Emissions **Site 59**

Year =	2019		
Duration =	21	days	
Volume of Material =	19400	CY	
Scow capacity =	3000	cy	
scow loads =	6.466667		
loads/day =	0.307937		
Trips/day =	0.615873		
Tug/scow speed =	8	knots	Source : Port of Oakland Emission Inventory, 2016
	9.2	miles/hour	
Distance to air basin =	30	miles	
Hours/trip =	3.26087	hours	
Hours/day =	2.008282		

Source **Work Boat**

Use = 2 hours/day

Total Useage during phase = 42 hours

Emission Rate Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model

Running	CO	ROG	NOx	PM10	PM2.5	CO2
lb/hr	0.890634	0.254863	3.031195	0.174348	0.155252	214.39

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
pound/day =	0.51	6.06	0.348696	0.310504	428.7862	1.781269
TPY =	0.01	0.06	3.66E-03	3.26E-03	4.50	0.02

Source **Tug Boat to push/pull scow - Main Engine**

Year = 2019

Useage = 2.008282 hour/ day

Total Useage phase = 42.17391 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	9.651398	2.439527	26.79984	1.451799	1.292786	1712.70	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
Pound/day =	4.90	53.82	2.92	2.60	3439.59	19.38272
TPY =	0.05	0.57	0.03	0.03	36.12	0.20

Source **Tug Boat to push/pull scow - Auxillary Engine**

Year = 2019

Useage = 2.008282 hour/ day

Total Useage phase = 42.17391 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	2.276278	0.575362	6.320731	0.342406	0.304903	403.94	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	SO2	CO
Pound/day =	1.16	12.69	0.69	0.61	811.23		4.571408
TPY =	0.01	0.13	0.01	0.01	8.52		0.05

Total Lb/day ==	**6.56**	**72.58**	**3.95**	**3.52**	**4679.60**	**25.74**
Total TPY =	**0.07**	**0.76**	**0.04**	**0.04**	**49.14**	**0.27**
Total MT CO2e =					**44.5753**	
CalEEMod =	1.03	11.05	0.64	0.52		
					13.93	MTY
Total Lb/day ==	**7.59**	**83.63**	**4.59**	**4.04**		
			Total MT CO2e =		**58.5053**	

Construction Marine Emissions **Site 60**

Year = 2019

Duration = 21 days
Volume of Material = 7300 CY

Scow capacity = 3000 cy
scow loads = 2.433333

loads/day = 0.115873
Trips/day = 0.231746
Tug/scow speed = 8 knots Source : Port of Oakland Emission Inventory, 2016
9.2 miles/hour
Distance to air basin = 30 miles
Hours/trip = 3.26087 hours
Hours/day = 0.755694

Source **Work Boat**

Use = 2 hours/day

Total Useage during phase = 42 hours

Emission Rate Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model

Running	CO	ROG	NOx	PM10	PM2.5	CO2
lb/hr	0.890634	0.254863	3.031195	0.174348	0.155252	214.39

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
pound/day =	0.51	6.06	0.348696	0.310504	428.7862	1.781269
TPY =	0.01	0.06	3.66E-03	3.26E-03	4.50	0.02

Source **Tug Boat to push/pull scow - Main Engine**

Year = 2019

Useage = 0.755694 hour/ day

Total Useage phase = 15.86957 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	9.651398	2.439527	26.79984	1.451799	1.292786	1712.70	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
Pound/day =	1.84	20.25	1.10	0.98	1294.28	7.293499
TPY =	0.02	0.21	0.01	0.01	13.59	0.08

Source **Tug Boat to push/pull scow - Auxillary Engine**

Year = 2019

Useage = 0.755694 hour/ day

Total Useage phase = 15.86957 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	2.276278	0.575362	6.320731	0.342406	0.304903	403.94	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	SO2	CO
Pound/day =	0.43	4.78	0.26	0.23	305.26		1.720169
TPY =	0.00	0.05	0.00	0.00	3.21		0.02

Total Lb/day ==	**2.79**	**31.09**	**1.70**	**1.52**	**2028.32**	**10.79**
Total TPY =	**0.03**	**0.33**	**0.02**	**0.02**	**21.30**	**0.11**

Total MT CO2e = **19.32065**

CalEEMod =	1	10.76	0.62	0.5		
					39.29	MTY
Total Lb/day =	**3.79**	**41.85**	**2.32**	**2.02**		

Total MT CO2e = **58.61**

Construction Marine Emissions **Site 61**

Year = 2019

Duration = 21 days
Volume of Material = 95560 CY

Scow capacity = 6000 cy
scow loads = 15.92667

loads/day = 0.758413
Trips/day = 1.516825
Tug/scow speed = 8 knots Source : Port of Oakland Emission Inventory, 2016
9.2 miles/hour
Distance to air basin = 40 miles
Hours/trip = 4.347826 hours
Hours/day = 6.594893

Source **Work Boat**

Use = 2 hours/day

Total Useage during phase = 42 hours

Emission Rate Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model

Running	CO	ROG	NOx	PM10	PM2.5	CO2
lb/hr	0.890634	0.254863	3.031195	0.174348	0.155252	214.39

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
pound/day =	0.51	6.06	0.348696	0.310504	428.7862	1.781269
TPY =	0.01	0.06	3.66E-03	3.26E-03	4.50	0.02

Source **Tug Boat to push/pull scow - Main Engine**

Year = 2019

Useage = 6.594893 hour/ day

Total Useage phase = 138.4928 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	9.651398	2.439527	26.79984	1.451799	1.292786	1712.70	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
Pound/day =	16.09	176.74	9.57	8.53	11295.10	63.64994
TPY =	0.17	1.86	0.10	0.09	118.60	0.67

Source **Tug Boat to push/pull scow - Auxillary Engine**

Year = 2019

Useage = 6.594893 hour/ day

Total Useage phase = 138.4928 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	2.276278	0.575362	6.320731	0.342406	0.304903	403.94	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	SO2	CO
Pound/day =	3.79	41.68	2.26	2.01	2663.94		15.01181
TPY =	0.04	0.44	0.02	0.02	27.97		0.16

Total Lb/day ==	**20.39**	**224.49**	**12.18**	**10.85**	**14387.83**		**80.44**
Total TPY =	**0.21**	**2.36**	**0.13**	**0.11**	**151.07**		**0.84**
Total MT CO2e =					**137.0505**		
CalEEMod PPD =	1.0312	11.05	0.64	0.52			
CalEEMod TPY =	0.01	0.116	0.0067	0.0054			
					13.93	MTCO2e	
Total Lb/day ==	21.42	235.54	12.82	11.37			
Total TPY =	0.22	2.47	0.13	0.12			

Total MT CO2e = 150.9805

Construction Marine Emissions **Site 63**

Year = 2019

Duration = 21 days
Volume of Material = 38680 CY

Scow capacity = 6000 cy
scow loads = 6.446667

loads/day = 0.306984
Trips/day = 0.613968
Tug/scow speed = 8 knots Source : Port of Oakland Emission Inventory, 2016
9.2 miles/hour
Distance to air basin = 40 miles
Hours/trip = 4.347826 hours
Hours/day = 2.669427

Source **Work Boat**

Use = 2 hours/day

Total Useage during phase = 42 hours

Emission Rate Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model

Running	CO	ROG	NOx	PM10	PM2.5	CO2
lb/hr	0.890634	0.254863	3.031195	0.174348	0.155252	214.39

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
pound/day =	0.51	6.06	0.348696	0.310504	428.7862	1.781269
TPY =	0.01	0.06	3.66E-03	3.26E-03	4.50	0.02

Source **Tug Boat to push/pull scow - Main Engine**

Year = 2019

Useage = 2.669427 hour/ day

Total Useage phase = 56.05797 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	9.651398	2.439527	26.79984	1.451799	1.292786	1712.70	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
Pound/day =	6.51	71.54	3.88	3.45	4571.94	25.7637
TPY =	0.07	0.75	0.04	0.04	48.01	0.27

Source **Tug Boat to push/pull scow - Auxillary Engine**

Year = 2019

Useage = 2.669427 hour/ day

Total Useage phase = 56.05797 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	2.276278	0.575362	6.320731	0.342406	0.304903	403.94	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	SO2	CO
Pound/day =	1.54	16.87	0.91	0.81	1078.29		6.076359
TPY =	0.02	0.18	0.01	0.01	11.32		0.06

Total Lb/day ==	**8.56**	**94.48**	**5.14**	**4.58**	**6079.01**		**33.62**
Total TPY =	**0.09**	**0.99**	**0.05**	**0.05**	**63.83**		**0.35**
Total MT CO2e =					**57.90531**		
CalEEMod PPD =	1.0312	11.05	0.64	0.52			
CalEEMod TPY =	0.01	0.116	0.0067	0.0054			
					13.93	MTCO2e	
Total Lb/day ==	9.59	105.53	5.78	5.10			
Total TPY =	0.10	1.11	0.06	0.05			

Total MT CO2e = 71.83531

Construction Marine Emissions **Site 65**

Year = 2019

Duration = 21 days
Volume of Material = 8280 CY

Scow capacity = 6000 cy
scow loads = 1.38

loads/day = 0.065714
Trips/day = 0.131429
Tug/scow speed = 8 knots Source : Port of Oakland Emission Inventory, 2016
9.2 miles/hour
Distance to air basin = 40 miles
Hours/trip = 4.347826 hours
Hours/day = 0.571429

Source **Work Boat**

Use = 2 hours/day

Total Useage during phase = 42 hours

Emission Rate Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model

Running	CO	ROG	NOx	PM10	PM2.5	CO2
lb/hr	0.890634	0.254863	3.031195	0.174348	0.155252	214.39

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
pound/day =	0.51	6.06	0.348696	0.310504	428.7862	1.781269
TPY =	0.01	0.06	3.66E-03	3.26E-03	4.50	0.02

Source **Tug Boat to push/pull scow - Main Engine**

Year = 2019

Useage = 0.571429 hour/ day

Total Useage phase = 12 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	9.651398	2.439527	26.79984	1.451799	1.292786	1712.70	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
Pound/day =	1.39	15.31	0.83	0.74	978.69	5.515085
TPY =	0.01	0.16	0.01	0.01	10.28	0.06

Source **Tug Boat to push/pull scow - Auxillary Engine**

Year = 2019

Useage = 0.571429 hour/ day

Total Useage phase = 12 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	2.276278	0.575362	6.320731	0.342406	0.304903	403.94	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	SO2	CO
Pound/day =	0.33	3.61	0.20	0.17	230.82		1.30073
TPY =	0.00	0.04	0.00	0.00	2.42		0.01

Total Lb/day ==	**2.23**	**24.99**	**1.37**	**1.22**	**1638.30**		**8.60**
Total TPY =	**0.02**	**0.26**	**0.01**	**0.01**	**17.20**		**0.09**
Total MT CO2e =					**15.60551**		
CalEEMod PPD =	1.0312	11.05	0.64	0.52			
CalEEMod TPY =	0.01	0.116	0.0067	0.0054			
					13.93	MTCO2e	
Total Lb/day ==	3.26	36.04	2.01	1.74			
Total TPY =	0.03	0.38	0.02	0.02			

Total MT CO2e = 29.53551

Construction Marine Emissions **Site 67**

Year = 2019

Duration = 21 days
Volume of Material = 4500 CY

Scow capacity = 6000 cy
scow loads = 0.75

loads/day = 0.035714
Trips/day = 0.071429
Tug/scow speed = 8 knots Source : Port of Oakland Emission Inventory, 2016
9.2 miles/hour
Distance to air basin = 40 miles
Hours/trip = 4.347826 hours
Hours/day = 0.310559

Source **Work Boat**

Use = 2 hours/day

Total Useage during phase = 42 hours

Emission Rate Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model

Running	CO	ROG	NOx	PM10	PM2.5	CO2
lb/hr	0.890634	0.254863	3.031195	0.174348	0.155252	214.39

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
pound/day =	0.51	6.06	0.348696	0.310504	428.7862	1.781269
TPY =	0.01	0.06	3.66E-03	3.26E-03	4.50	0.02

Source **Tug Boat to push/pull scow - Main Engine**

Year = 2019

Useage = 0.310559 hour/ day

Total Useage phase = 6.521739 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	9.651398	2.439527	26.79984	1.451799	1.292786	1712.70	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	CO
Pound/day =	0.76	8.32	0.45	0.40	531.90	2.997329
TPY =	0.01	0.09	0.00	0.00	5.58	0.03

Source **Tug Boat to push/pull scow - Auxillary Engine**

Year = 2019

Useage = 0.310559 hour/ day

Total Useage phase = 6.521739 hours

Emission Factors

Running	CO	ROG	NOx	PM10	PM2.5	CO2	Source: SMAQMD Harborcraft, Dredge and Barge Emission Factor Model
lbs/hour	2.276278	0.575362	6.320731	0.342406	0.304903	403.94	

Running Emissions =	ROG	NOx	PM10	PM2.5	CO2	SO2	CO
Pound/day =	0.18	1.96	0.11	0.09	125.45		0.706919
TPY =	0.00	0.02	0.00	0.00	1.32		0.01

Total Lb/day ==	**1.45**	**16.35**	**0.91**	**0.81**	**1086.13**		**5.49**
Total TPY =	**0.02**	**0.17**	**0.01**	**0.01**	**11.40**		**0.06**
Total MT CO2e =					**10.34586**		
CalEEMod PPD =	1.0312	11.05	0.64	0.52			
CalEEMod TPY =	0.01	0.116	0.0067	0.0054			
					13.93	MTCO2e	
Total Lb/day ==	2.48	27.40	1.55	1.33			
Total TPY =	0.03	0.29	0.02	0.01			

Total MT CO2e = 24.27586

4. SMAQMD Harborcraft Emission Factor Output.

SMAQMD Harborcraft, Dredge and Barge Emission Factor Calculator - Main Engine Emission Rates

Calendar Year: 2019 **Number of Entries:** 2

Vessel/Engine Information								Emission Rates (lb/hr; estimates for each row are totals over the number of engines listed in column J for that row)										Emission es for a Single Engine (g/bhp-hr)									
Vessel Name	Vessel Number	Home Port	Vessel Type	Engine Model Year	Engine Rated Power (hp)	Engine Load Factor	Number of engines	PM_{10}	$PM_{2.5}$	NOx	ROG	CO	SO_2	CO_2	CH_4	N_2O	CO_2e	PM_{10}	$PM_{2.5}$	NOx	Rat ROG	CO	SO_2	CO_2	CH_4	N_2O	CO_2e
Work Boat			Work Boats	2002	364	0.45	1	0.174	0.155	3.031	0.255	0.891	0.002	213.660	0.009	0.002	214.393	0.482	0.429	8.385	0.705	2.464	0.006	591.045	0.024	0.005	593.1
Barge			Barge	2002	2883	0.45	1	1.452	1.293	26.800	2.440	9.651	0.016	1706.847	0.069	0.014	1712.704	0.508	0.452	9.372	0.853	3.375	0.006	596.868	0.024	0.005	598.9

DWR GHG Emissions Reduction Plan Consistency Determination Form

For Projects Using Contractors or Other Outside Labor

Print Form

This form is to be used by DWR project managers to document a DWR CEQA project's consistency with the DWR Greenhouse Gas Emissions Reduction Plan. This form is to be used only when DWR is the Lead Agency and when contractors or outside labor and equipment are use to implement the project.

Additional Guidance on filling out this form can be found at: dwrclimatecange.water.ca.gov/guidance_resources.cfm

The DWR Greenhouse Gas Emissions Reduction Plan can be accessed at: http://www.water.ca.gov/climatechange/CAP.cfm

California Department of Water Resources
1416 9th Steet
Sacramento, CA
95814
dwrclimatechange.water.ca.gov
www.water.ca.gov/climatechange

Project Name:	Storm Damage DWR Rehabilitation (SDDR) Project
Environmental Document type:	IS/MND
Manager's Name:	Micheal Sabbaghian
Manager's email:	Mahyar.Sabbaghian@water.ca.gov
Division:	Flood Management
Office, Branch, or Field Division	Flood Maintenance Office

Short Project Description:

High flow conditions occurring during the winter of 2016/2017 resulted in erosion and other damage at numerous levees managed by the California Department of Water Resources (DWR). There is a very high likelihood of levee failure during the next high water event which may cause catastrophic flooding, property damage, and loss of life within the protected area.

The Emergency Rehabilitation Program was created to make much needed repairs prior to the 2017/2018 winter season. DWR implemented the 2017 Storm Damage DWR Rehabilitation Program at several repair sites during fall of 2017 (Phases 1 and 2) and summer of 2018 (Phase 3). Additional serious (non-emergency) repair sites, Phase 4 and 5 (Project) are identified for rehabilitation. The project is authorized and sponsored by DWR's Division of Flood Management, Flood Maintenance Office.

Project GHG Emissions Summary

Total Construction Emissions	3,795	$mtCO_2e$
Maximum Annual Construction Emissions	3,795	$mtCO_2e$

☒ All other emissions from the project not accounted for above will occur as ongoing operational, maintenance, or business activity emissions and therefore have already been accounted for and analyzed in the GGERP.

Extraordinary Construction Project Determination

Do total project construction emissions exceed 25,000 $mtCO_2e$ for the entire construction phase or exceed 12,500 $mtCO_2e$ in any single year of construction.

○ Yes - Addition analysis is required, consult with C4

◉ No - Additional analysis not required

Project GHG Reduction Plan Checklist

☐ All Project Level GHG Emissions Reduction Measures have been incorporated into the design or implementation plan for the project. (Project Level GHG Emissions Reduction Measures)

Or

☒ All feasible Project Level GHG Emissions Reduction Measures have been incorporated into the design or implementation plan for the project and and Measures not incorporated have been listed and determined not be apply to the proposed project (include as an attachment)

☒ Project does not conflict with any of the Specific Action GHG Emissions Reduction Measures (Specific Action GHG Emissions Reduction Measures)

Would implementation of the project result in additional energy demands on the SWP system of 15 GWh/yr or greater?

○ Yes ◉ No

If you answered Yes, attach a Renewable Power Procurement Plan update approval letter from the DWR SWP Power and Risk Office.

Is there substantial evidence that the effects of the proposed project may be cumulatively considerable notwithstanding the proposed project's compliance with the requirements of the DWR GHG Reduction Plan?

○ Yes ◉ No

If you answered Yes, the project is not eligible for streamlined analysis of GHG emissions using the DWR GHG Emissions Reduction Plan. (See CEQA Guidelines, section 15183.5, subdivision (b)(2).)

Based on the information provided above and information provided in associated environmental documentation completed pursuant to the above referenced project, the DWR CEQA Climate Change Committee has determined that the proposed project is consistent with the DWR Greenhouse Gas Reduction Plan and the greenhouse gasses emitted by the project are covered by the plan's analysis.

Project Manager Signature:	[signature]	Date:	2/6/19
C4 Approval Signature:	Jennifer Morales	Date:	2/19/2019

Attachments:

☒ GHG Emissions Inventory

☒ List and Explanation of excluded Project Level GHG Emissions Reduction Measures

☐ Plan to update Renewable Energy Procurement Plan from DWR SWP Power and Risk Office

Appendix C
Species Lists

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE **RareFind**

Query Summary:
Quad IS (Davis (3812156) OR Sacramento West (3812155) OR Kirkville (3812187) OR Llano Seco (3912158) OR Rio Vista (3812126) OR Courtland (3812135) OR Clarksburg (3812145) OR Sheridan (3812184) OR Vernalis (3712163) OR Lathrop (3712173) OR Stockton West (3712183) OR Gerber (4012212) OR Isleton (3812125) OR Chico (3912167))

Print Close

CNDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
Agelaius tricolor	tricolored blackbird	Birds	ABPBXB0020	951	26	None	Candidate Endangered	G2G3	S1S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Freshwater marsh, Marsh & swamp, Swamp, Wetland
Ambystoma californiense	California tiger salamander	Amphibians	AAAAA01180	1178	2	Threatened	Threatened	G2G3	S2S3	null	CDFW_WL-Watch List, IUCN_VU-Vulnerable	Cismontane woodland, Meadow & seep, Riparian woodland, Valley & foothill grassland, Vernal pool, Wetland
Anthicus antiochensis	Antioch Dunes anthicid beetle	Insects	IICOL49020	6	2	None	None	G1	S1	null	null	Interior dunes
Anthicus sacramento	Sacramento anthicid beetle	Insects	IICOL49010	13	8	None	None	G1	S1	null	IUCN_EN-Endangered	Interior dunes
Antrozous pallidus	pallid bat	Mammals	AMACC10010	415	3	None	None	G5	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority	Chaparral, Coastal scrub, Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Riparian woodland, Sonoran desert scrub, Upper montane coniferous forest, Valley & foothill grassland
Archoplites interruptus	Sacramento perch	Fish	AFCQB07010	5	1	None	None	G2G3	S1	null	AFS_TH-Threatened, CDFW_SSC-Species of Special Concern	Aquatic, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters
Ardea alba	great egret	Birds	ABNGA04040	43	2	None	None	G5	S4	null	CDF_S-Sensitive, IUCN_LC-Least Concern	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland
Ardea herodias	great blue heron	Birds	ABNGA04010	155	2	None	None	G5	S4	null	CDF_S-Sensitive, IUCN_LC-Least Concern	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland
Astragalus tener	Ferris' milk-	Dicots	PDFAB0F8R3	18	5	None	None	G2T1	S1	1B.1	BLM_S-	Meadow & seep,

var. ferrisiae	vetch										Sensitive	Valley & foothill grassland, Wetland
Astragalus tener var. tener	alkali milk-vetch	Dicots	PDFAB0F8R1	65	3	None	None	G2T2	S2	1B.2	null	Alkali playa, Valley & foothill grassland, Vernal pool, Wetland
Athene cunicularia	burrowing owl	Birds	ABNSB10010	1972	48	None	None	G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Coastal prairie, Coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, Valley & foothill grassland
Atriplex cordulata var. cordulata	heartscale	Dicots	PDCHE040B0	66	2	None	None	G3T2	S2	1B.2	BLM_S-Sensitive	Chenopod scrub, Meadow & seep, Valley & foothill grassland
Atriplex depressa	brittlescale	Dicots	PDCHE042L0	60	1	None	None	G2	S2	1B.2	null	Alkali playa, Chenopod scrub, Meadow & seep, Valley & foothill grassland, Vernal pool, Wetland
Balsamorhiza macrolepis	big-scale balsamroot	Dicots	PDAST11061	50	1	None	None	G2	S2	1B.2	BLM_S-Sensitive, USFS_S-Sensitive	Chaparral, Cismontane woodland, Ultramafic, Valley & foothill grassland
Blepharizonia plumosa	big tarplant	Dicots	PDAST1C011	53	1	None	None	G1G2	S1S2	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Valley & foothill grassland
Bombus crotchii	Crotch bumble bee	Insects	IIHYM24480	234	2	None	None	G3G4	S1S2	null	null	null
Bombus occidentalis	western bumble bee	Insects	IIHYM24250	282	3	None	None	G2G3	S1	null	USFS_S-Sensitive, XERCES_IM-Imperiled	null
Branchinecta conservatio	Conservancy fairy shrimp	Crustaceans	ICBRA03010	43	1	Endangered	None	G2	S2	null	IUCN_EN-Endangered	Valley & foothill grassland, Vernal pool, Wetland
Branchinecta lynchi	vernal pool fairy shrimp	Crustaceans	ICBRA03030	766	14	Threatened	None	G3	S3	null	IUCN_VU-Vulnerable	Valley & foothill grassland, Vernal pool, Wetland
Brasenia schreberi	watershield	Dicots	PDCAB01010	33	3	None	None	G5	S3	2B.3	null	Marsh & swamp, Wetland
Buteo swainsoni	Swainson's hawk	Birds	ABNKC19070	2465	318	None	Threatened	G5	S3	null	BLM_S-Sensitive, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Great Basin grassland, Riparian forest, Riparian woodland, Valley & foothill grassland
Carex comosa	bristly sedge	Monocots	PMCYP032Y0	29	7	None	None	G5	S2	2B.1	null	Coastal prairie, Freshwater marsh, Marsh & swamp, Valley & foothill grassland, Wetland
Centromadia parryi ssp. parryi	pappose tarplant	Dicots	PDAST4R0P2	39	2	None	None	G3T2	S2	1B.2	BLM_S-Sensitive	Chaparral, Coastal prairie, Marsh & swamp, Meadow & seep, Valley & foothill grassland
Charadrius alexandrinus	western snowy plover	Birds	ABNNB03031	138	1	Threatened	None	G3T3	S2S3	null	CDFW_SSC-Species of	Great Basin standing waters,

nivosus											Special Concern, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Sand shore, Wetland
Charadrius montanus	mountain plover	Birds	ABNNB03100	90	1	None	None	G3	S2S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Chenopod scrub, Valley & foothill grassland
Chloropyron palmatum	palmate-bracted bird's-beak	Dicots	PDSCR0J0J0	25	1	Endangered	Endangered	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Chenopod scrub, Meadow & seep, Valley & foothill grassland, Wetland
Cicindela hirticollis abrupta	Sacramento Valley tiger beetle	Insects	IICOL02106	6	2	None	None	G5TH	SH	null	null	Sand shore
Cicuta maculata var. bolanderi	Bolander's water-hemlock	Dicots	PDAPI0M051	17	1	None	None	G5T4	S2	2B.1	null	Marsh & swamp, Salt marsh, Wetland
Cirsium crassicaule	slough thistle	Dicots	PDAST2E0U0	18	2	None	None	G1	S1	1B.1	BLM_S-Sensitive	Chenopod scrub, Freshwater marsh, Marsh & swamp, Riparian scrub, Wetland
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	Marsh	CTT52410CA	60	4	None	None	G3	S2.1	null	null	Marsh & swamp, Wetland
Coccyzus americanus occidentalis	western yellow-billed cuckoo	Birds	ABNRB02022	155	14	Threatened	Endangered	G5T2T3	S1	null	BLM_S-Sensitive, NABCI_RWL-Red Watch List, USFS_S-Sensitive, USFWS_BCC-Birds of Conservation Concern	Riparian forest
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	Insects	IICOL48011	271	24	Threatened	None	G3T2	S2	null	null	Riparian scrub
Downingia pusilla	dwarf downingia	Dicots	PDCAM060C0	132	2	None	None	GU	S2	2B.2	null	Valley & foothill grassland, Vernal pool, Wetland
Elanus leucurus	white-tailed kite	Birds	ABNKC06010	177	7	None	None	G5	S3S4	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_LC-Least Concern	Cismontane woodland, Marsh & swamp, Riparian woodland, Valley & foothill grassland, Wetland
Elderberry Savanna	Elderberry Savanna	Riparian	CTT63440CA	4	1	None	None	G2	S2.1	null	null	Riparian scrub
Emys marmorata	western pond turtle	Reptiles	ARAAD02030	1346	12	None	None	G3G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive	Aquatic, Artificial flowing waters, Klamath/North coast flowing waters, Klamath/North coast standing waters, Marsh & swamp, Sacramento/San Joaquin flowing

												waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland
Eremophila alpestris actia	California horned lark	Birds	ABPAT02011	94	1	None	None	G5T4Q	S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Marine intertidal & splash zone communities, Meadow & seep
Erethizon dorsatum	North American porcupine	Mammals	AMAFJ01010	508	6	None	None	G5	S3	null	IUCN_LC-Least Concern	Broadleaved upland forest, Cismontane woodland, Closed-cone coniferous forest, Lower montane coniferous forest, North coast coniferous forest, Upper montane coniferous forest
Eryngium racemosum	Delta button-celery	Dicots	PDAPI0Z0S0	26	2	None	Endangered	G1	S1	1B.1	null	Riparian scrub, Wetland
Eumops perotis californicus	western mastiff bat	Mammals	AMACD02011	296	1	None	None	G5T4	S3S4	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, WBWG_H-High Priority	Chaparral, Cismontane woodland, Coastal scrub, Valley & foothill grassland
Euphorbia ocellata ssp. rattanii	Stony Creek spurge	Dicots	PDEUP0D1P1	35	1	None	None	G4T2?	S2?	1B.2	BLM_S-Sensitive	Chaparral, Riparian scrub, Valley & foothill grassland
Extriplex joaquinana	San Joaquin spearscale	Dicots	PDCHE041F3	124	5	None	None	G2	S2	1B.2	BLM_S-Sensitive, SB_RSABG-Rancho Santa Ana Botanic Garden	Alkali playa, Chenopod scrub, Meadow & seep, Valley & foothill grassland
Falco columbarius	merlin	Birds	ABNKD06030	36	1	None	None	G5	S3S4	null	CDFW_WL-Watch List, IUCN_LC-Least Concern	Estuary, Great Basin grassland, Valley & foothill grassland
Falco peregrinus anatum	American peregrine falcon	Birds	ABNKD06071	57	1	Delisted	Delisted	G4T4	S3S4	null	CDF_S-Sensitive, CDFW_FP-Fully Protected, USFWS_BCC-Birds of Conservation Concern	null
Fritillaria eastwoodiae	Butte County fritillary	Monocots	PMLIL0V060	235	1	None	None	G3Q	S3	3.2	USFS_S-Sensitive	Chaparral, Cismontane woodland, Lower montane coniferous forest, Ultramafic
Fritillaria pluriflora	adobe-lily	Monocots	PMLIL0V0F0	113	1	None	None	G2G3	S2S3	1B.2	BLM_S-Sensitive, SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral, Cismontane woodland, Ultramafic, Valley & foothill grassland
Great Valley Cottonwood Riparian Forest	Great Valley Cottonwood Riparian Forest	Riparian	CTT61410CA	56	10	None	None	G2	S2.1	null	null	Riparian forest
Great Valley Mixed Riparian Forest	Great Valley Mixed Riparian Forest	Riparian	CTT61420CA	68	13	None	None	G2	S2.2	null	null	Riparian forest
Great Valley Valley Oak Riparian Forest	Great Valley Valley Oak Riparian Forest	Riparian	CTT61430CA	33	5	None	None	G1	S1.1	null	null	Riparian forest

Great Valley Willow Scrub	Great Valley Willow Scrub	Riparian	CTT63410CA	18	5	None	None	G3	S3.2	null	null	Riparian scrub
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	Dicots	PDMAL0H0R3	173	21	None	None	G5T3	S3	1B.2	SB_RSABG-Rancho Santa Ana Botanic Garden	Freshwater marsh, Marsh & swamp, Wetland
Hypomesus transpacificus	Delta smelt	Fish	AFCHB01040	27	6	Threatened	Endangered	G1	S1	null	AFS_TH-Threatened, IUCN_EN-Endangered	Aquatic, Estuary
Icteria virens	yellow-breasted chat	Birds	ABPBX24010	97	1	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Riparian forest, Riparian scrub, Riparian woodland
Juglans hindsii	Northern California black walnut	Dicots	PDJUG02040	5	1	None	None	G1	S1	1B.1	SB_USDA-US Dept of Agriculture	Riparian forest, Riparian woodland
Lanius ludovicianus	loggerhead shrike	Birds	ABPBR01030	109	1	None	None	G4	S4	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Broadleaved upland forest, Desert wash, Joshua tree woodland, Mojavean desert scrub, Pinon & juniper woodlands, Riparian woodland, Sonoran desert scrub
Lasionycteris noctivagans	silver-haired bat	Mammals	AMACC02010	139	3	None	None	G5	S3S4	null	IUCN_LC-Least Concern, WBWG_M-Medium Priority	Lower montane coniferous forest, Oldgrowth, Riparian forest
Lasiurus blossevillii	western red bat	Mammals	AMACC05060	128	3	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, WBWG_H-High Priority	Cismontane woodland, Lower montane coniferous forest, Riparian forest, Riparian woodland
Lasiurus cinereus	hoary bat	Mammals	AMACC05030	238	5	None	None	G5	S4	null	IUCN_LC-Least Concern, WBWG_M-Medium Priority	Broadleaved upland forest, Cismontane woodland, Lower montane coniferous forest, North coast coniferous forest
Laterallus jamaicensis coturniculus	California black rail	Birds	ABNME03041	303	1	None	Threatened	G3G4T1	S1	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_NT-Near Threatened, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Brackish marsh, Freshwater marsh, Marsh & swamp, Salt marsh, Wetland
Lathyrus jepsonii var. jepsonii	Delta tule pea	Dicots	PDFAB250D2	131	9	None	None	G5T2	S2	1B.2	SB_BerrySB-Berry Seed Bank, SB_RSABG-Rancho Santa Ana Botanic Garden	Freshwater marsh, Marsh & swamp, Wetland
Legenere limosa	legenere	Dicots	PDCAM0C010	83	2	None	None	G2	S2	1B.1	BLM_S-Sensitive	Vernal pool, Wetland
Lepidium latipes var. heckardii	Heckard's pepper-grass	Dicots	PDBRA1M0K1	14	2	None	None	G4T1	S1	1B.2	null	Valley & foothill grassland, Vernal pool
Lepidurus packardi	vernal pool tadpole	Crustaceans	ICBRA10010	324	15	Endangered	None	G4	S3S4	null	IUCN_EN-Endangered	Valley & foothill grassland,

	shrimp											Vernal pool, Wetland
Lilaeopsis masonii	Mason's lilaeopsis	Dicots	PDAPI19030	197	13	None	Rare	G2	S2	1B.1	null	Freshwater marsh, Marsh & swamp, Riparian scrub, Wetland
Limnanthes floccosa ssp. californica	Butte County meadowfoam	Dicots	PDLIM02042	21	3	Endangered	Endangered	G4T1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Valley & foothill grassland, Vernal pool, Wetland
Limosella australis	Delta mudwort	Dicots	PDSCR10030	59	4	None	None	G4G5	S2	2B.1	null	Brackish marsh, Freshwater marsh, Marsh & swamp, Riparian scrub, Wetland
Linderiella occidentalis	California linderiella	Crustaceans	ICBRA06010	435	20	None	None	G2G3	S2S3	null	IUCN_NT-Near Threatened	Vernal pool
Melospiza melodia	song sparrow ("Modesto" population)	Birds	ABPBXA3010	92	21	None	None	G5	S3?	null	CDFW_SSC-Species of Special Concern	null
Myrmosula pacifica	Antioch multilid wasp	Insects	IIHYM15010	3	1	None	None	GH	SH	null	null	Interior dunes
Neotoma fuscipes riparia	riparian (=San Joaquin Valley) woodrat	Mammals	AMAFF08081	3	2	Endangered	None	G5T1Q	S1	null	CDFW_SSC-Species of Special Concern	Riparian forest, Riparian scrub
Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	Fish	AFCHA0209K	31	8	Threatened	None	G5T2Q	S2	null	AFS_TH-Threatened	Aquatic, Sacramento/San Joaquin flowing waters
Oncorhynchus tshawytscha pop. 6	chinook salmon - Central Valley spring-run ESU	Fish	AFCHA0205A	13	2	Threatened	Threatened	G5	S1	null	AFS_TH-Threatened	Aquatic, Sacramento/San Joaquin flowing waters
Oncorhynchus tshawytscha pop. 7	chinook salmon - Sacramento River winter-run ESU	Fish	AFCHA0205B	2	2	Endangered	Endangered	G5	S1	null	AFS_EN-Endangered	Aquatic, Sacramento/San Joaquin flowing waters
Pandion haliaetus	osprey	Birds	ABNKC01010	500	2	None	None	G5	S4	null	CDF_S-Sensitive, CDFW_WL-Watch List, IUCN_LC-Least Concern	Riparian forest
Paronychia ahartii	Ahart's paronychia	Dicots	PDCAR0L0V0	58	2	None	None	G3	S3	1B.1	BLM_S-Sensitive	Cismontane woodland, Valley & foothill grassland, Vernal pool, Wetland
Pogonichthys macrolepidotus	Sacramento splittail	Fish	AFCJB34020	15	1	None	None	GNR	S3	null	AFS_VU-Vulnerable, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered	Aquatic, Estuary, Freshwater marsh, Sacramento/San Joaquin flowing waters
Progne subis	purple martin	Birds	ABPAU01010	71	1	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Broadleaved upland forest, Lower montane coniferous forest
Puccinellia simplex	California alkali grass	Monocots	PMPOA53110	71	4	None	None	G3	S2	1B.2	null	Chenopod scrub, Meadow & seep, Valley & foothill grassland, Vernal pool
Rana boylii	foothill yellow-legged frog	Amphibians	AAABH01050	2268	1	None	Candidate Threatened	G3	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened,	Aquatic, Chaparral, Cismontane woodland, Coastal scrub, Klamath/North coast flowing waters, Lower montane

											USFS_S-Sensitive	coniferous forest, Meadow & seep, Riparian forest, Riparian woodland, Sacramento/San Joaquin flowing waters
Riparia riparia	bank swallow	Birds	ABPAU08010	297	16	None	Threatened	G5	S2	null	BLM_S-Sensitive, IUCN_LC-Least Concern	Riparian scrub, Riparian woodland
Sagittaria sanfordii	Sanford's arrowhead	Monocots	PMALI040Q0	126	8	None	None	G3	S3	1B.2	BLM_S-Sensitive	Marsh & swamp, Wetland
Scutellaria lateriflora	side-flowering skullcap	Dicots	PDLAM1U0Q0	13	3	None	None	G5	S2	2B.2	null	Marsh & swamp, Meadow & seep, Wetland
Setophaga petechia	yellow warbler	Birds	ABPBX03010	70	1	None	None	G5	S3S4	null	CDFW_SSC-Species of Special Concern, USFWS_BCC-Birds of Conservation Concern	Riparian forest, Riparian scrub, Riparian woodland
Sidalcea robusta	Butte County checkerbloom	Dicots	PDMAL110P0	34	2	None	None	G2	S2	1B.2	BLM_S-Sensitive	Chaparral, Cismontane woodland
Spirinchus thaleichthys	longfin smelt	Fish	AFCHB03010	46	8	Candidate	Threatened	G5	S1	null	CDFW_SSC-Species of Special Concern	Aquatic, Estuary
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	Monocots	PMPOT03091	21	1	None	None	G5T5	S2S3	2B.2	null	Marsh & swamp, Wetland
Sylvilagus bachmani riparius	riparian brush rabbit	Mammals	AMAEB01021	16	12	Endangered	Endangered	G5T1	S1	null	null	Riparian forest
Symphyotrichum lentum	Suisun Marsh aster	Dicots	PDASTE8470	173	21	None	None	G2	S2	1B.2	SB_RSABG-Rancho Santa Ana Botanic Garden, SB_USDA-US Dept of Agriculture	Brackish marsh, Freshwater marsh, Marsh & swamp, Wetland
Taxidea taxus	American badger	Mammals	AMAJF04010	559	3	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Alkali marsh, Alkali playa, Alpine, Alpine dwarf scrub, Bog & fen, Brackish marsh, Broadleaved upland forest, Chaparral, Chenopod scrub, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Desert dunes, Desert wash, Freshwater marsh, Great Basin grassland, Great Basin scrub, Interior dunes, Ione formation, Joshua tree woodland, Limestone, Lower montane coniferous forest, Marsh & swamp, Meadow & seep, Mojavean desert scrub, Montane dwarf scrub, North coast coniferous

												forest, Oldgrowth, Pavement plain, Redwood, Riparian forest, Riparian scrub, Riparian woodland, Salt marsh, Sonoran desert scrub, Sonoran thorn woodland, Ultramafic, Upper montane coniferous forest, Upper Sonoran scrub, Valley & foothill grassland
Thamnophis gigas	giant gartersnake	Reptiles	ARADB36150	366	39	Threatened	Threatened	G2	S2	null	IUCN_VU-Vulnerable	Marsh & swamp, Riparian scrub, Wetland
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	Dicots	PDAST9F031	9	2	None	None	G4T3	S1	2B.1	null	Marsh & swamp, Meadow & seep, Riparian forest, Vernal pool, Wetland
Trifolium hydrophilum	saline clover	Dicots	PDFAB400R5	49	2	None	None	G2	S2	1B.2	null	Marsh & swamp, Valley & foothill grassland, Vernal pool, Wetland
Tuctoria greenei	Greene's tuctoria	Monocots	PMPOA6N010	48	2	Endangered	Rare	G1	S1	1B.1	null	Vernal pool, Wetland
Vireo bellii pusillus	least Bell's vireo	Birds	ABPBW01114	483	5	Endangered	Endangered	G5T2	S2	null	IUCN_NT-Near Threatened, NABCI_YWL-Yellow Watch List	Riparian forest, Riparian scrub, Riparian woodland
Wolffia brasiliensis	Brazilian watermeal	Monocots	PMLEM03020	6	1	None	None	G5	S2	2B.3	null	Marsh & swamp, Wetland
Xanthocephalus xanthocephalus	yellow-headed blackbird	Birds	ABPBXB3010	13	2	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Marsh & swamp, Wetland

CNPS California Native Plant Society

Plant List

Inventory of Rare and Endangered Plants

45 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3812155, 3812156, 3812187, 3912158, 3812126, 3812135, 3812145, 3812184, 3712163, 3712173, 3712183, 4012212 3812125 and 3912167;

Modify Search Criteria Export to Excel Modify Columns Modify Sort Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Astragalus pauperculus	depauperate milk-vetch	Fabaceae	annual herb	Mar-Jun	4.3	S4	G4
Astragalus tener var. ferrisiae	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	1B.1	S1	G2T1
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	1B.2	S2	G2T2
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G3T2
Atriplex coronata var. coronata	crownscale	Chenopodiaceae	annual herb	Mar-Oct	4.2	S3	G4T3
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Azolla microphylla	Mexican mosquito fern	Azollaceae	annual / perennial herb	Aug	4.2	S4	G5
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	Mar-Jun	1B.2	S2	G2
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	Jul-Oct	1B.1	S1S2	G1G2
Brasenia schreberi	watershield	Cabombaceae	perennial rhizomatous herb (aquatic)	Jun-Sep	2B.3	S3	G5
Calycadenia oppositifolia	Butte County calycadenia	Asteraceae	annual herb	Apr-Jul	4.2	S3	G3
Carex comosa	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	2B.1	S2	G5
Centromadia parryi ssp. parryi	pappose tarplant	Asteraceae	annual herb	May-Nov	1B.2	S2	G3T2
Centromadia parryi ssp. rudis	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	4.2	S3	G3T3
Chloropyron palmatum	palmate-bracted bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct	1B.1	S1	G1
Cirsium crassicaule	slough thistle	Asteraceae	annual / perennial herb	May-Aug	1B.1	S1	G1
Claytonia palustris	marsh claytonia	Montiaceae	perennial herb	May-Oct	4.3	S4	G4
Cryptantha rostellata	red-stemmed cryptantha	Boraginaceae	annual herb	Apr-Jun	4.2	S3	G4
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	2B.2	S2	GU

Eryngium racemosum	Delta button-celery	Apiaceae	annual / perennial herb	Jun-Oct	1B.1	S1	G1
Erythranthe glaucescens	shield-bracted monkeyflower	Phrymaceae	annual herb	Feb-Aug(Sep)	4.3	S3S4	G3G4
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Fritillaria eastwoodiae	Butte County fritillary	Liliaceae	perennial bulbiferous herb	Mar-Jun	3.2	S3	G3Q
Fritillaria pluriflora	adobe-lily	Liliaceae	perennial bulbiferous herb	Feb-Apr	1B.2	S2S3	G2G3
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3
Juglans hindsii	Northern California black walnut	Juglandaceae	perennial deciduous tree	Apr-May	1B.1	S1	G1
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	May-Jul(Aug-Sep)	1B.2	S2	G5T2
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	1B.1	S2	G2
Lepidium latipes var. heckardii	Heckard's pepper-grass	Brassicaceae	annual herb	Mar-May	1B.2	S1	G4T1
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	1B.1	S2	G2
Limnanthes floccosa ssp. californica	Butte County meadowfoam	Limnanthaceae	annual herb	Mar-May	1B.1	S1	G4T1
Limosella australis	Delta mudwort	Scrophulariaceae	perennial stoloniferous herb	May-Aug	2B.1	S2	G4G5
Monardella venosa	veiny monardella	Lamiaceae	annual herb	May,Jul	1B.1	S1	G1
Navarretia nigelliformis ssp. nigelliformis	adobe navarretia	Polemoniaceae	annual herb	Apr-Jun	4.2	S3	G4T3
Paronychia ahartii	Ahart's paronychia	Caryophyllaceae	annual herb	Feb-Jun	1B.1	S3	G3
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	1B.2	S2	G3
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3
Scutellaria lateriflora	side-flowering skullcap	Lamiaceae	perennial rhizomatous herb	Jul-Sep	2B.2	S2	G5
Sidalcea robusta	Butte County checkerbloom	Malvaceae	perennial rhizomatous herb	Apr,Jun	1B.2	S2	G2
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	Potamogetonaceae	perennial rhizomatous herb (aquatic)	May-Jul	2B.2	S3	G5T5
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	1B.2	S2	G2
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	Asteraceae	annual herb	May-Sep	2B.1	S1	G4T3
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	1B.2	S2	G2
Tuctoria greenei	Greene's tuctoria	Poaceae	annual herb	May-Jul(Sep)	1B.1	S1	G1
Wolffia brasiliensis	Brazilian watermeal	Araceae	perennial herb (aquatic)	Apr,Dec	2B.3	S1	G5

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Questions and Comments

rareplants@cnps.org

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: October 29, 2018
Consultation Code: 08ESMF00-2019-SLI-0203
Event Code: 08ESMF00-2019-E-00600
Project Name: Phases 4 and 5 Levee Repair

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following office, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

San Francisco Bay-Delta Fish And Wildlife
650 Capitol Mall
Suite 8-300
Sacramento, CA 95814
(916) 930-5603

Project Summary

Consultation Code: 08ESMF00-2019-SLI-0203

Event Code: 08ESMF00-2019-E-00600

Project Name: Phases 4 and 5 Levee Repair

Project Type: STREAM / WATERBODY / CANALS / LEVEES / DIKES

Project Description: levee repair

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/38.938164174647724N121.65973330072472W

Counties: Butte, CA | Colusa, CA | Glenn, CA | Placer, CA | Sacramento, CA | San Joaquin, CA | Sutter, CA | Tehama, CA | Yolo, CA | Yuba, CA

Endangered Species Act Species

There is a total of 26 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Riparian Brush Rabbit *Sylvilagus bachmani riparius* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6189	Endangered
Riparian Woodrat (=san Joaquin Valley) *Neotoma fuscipes riparia* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6191	Endangered
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered

Birds

NAME	STATUS
Least Bell's Vireo *Vireo bellii pusillus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Northern Spotted Owl *Strix occidentalis caurina* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **proposed** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
San Bruno Elfin Butterfly *Callophrys mossii bayensis* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3394	Endangered
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850 Habitat assessment guidelines: https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp *Branchinecta conservatio* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Butte County Meadowfoam *Limnanthes floccosa ssp. californica* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4223	Endangered
Colusa Grass *Neostapfia colusana* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5690	Threatened
Fleshy Owl's-clover *Castilleja campestris ssp. succulenta* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8095	Threatened
Greene's Tuctoria *Tuctoria greenei* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1573	Endangered
Hairy Orcutt Grass *Orcuttia pilosa* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2262	Endangered
Hartweg's Golden Sunburst *Pseudobahia bahiifolia* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1704	Endangered
Hoover's Spurge *Chamaesyce hooveri* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3019	Threatened
Palmate-bracted Bird's Beak *Cordylanthus palmatus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1616	Endangered
Sacramento Orcutt Grass *Orcuttia viscida* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5507	Endangered
Slender Orcutt Grass *Orcuttia tenuis* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1063	Threatened

Critical habitats

There are 13 critical habitats wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Butte County Meadowfoam *Limnanthes floccosa ssp. californica* https://ecos.fws.gov/ecp/species/4223#crithab	Final
Conservancy Fairy Shrimp *Branchinecta conservatio* https://ecos.fws.gov/ecp/species/8246#crithab	Final
Delta Smelt *Hypomesus transpacificus* https://ecos.fws.gov/ecp/species/321#crithab	Final
Fleshy Owl's-clover *Castilleja campestris ssp. succulenta* https://ecos.fws.gov/ecp/species/8095#crithab	Final
Greene's Tuctoria *Tuctoria greenei* https://ecos.fws.gov/ecp/species/1573#crithab	Final
Hairy Orcutt Grass *Orcuttia pilosa* https://ecos.fws.gov/ecp/species/2262#crithab	Final
Hoover's Spurge *Chamaesyce hooveri* https://ecos.fws.gov/ecp/species/3019#crithab	Final
Sacramento Orcutt Grass *Orcuttia viscida* https://ecos.fws.gov/ecp/species/5507#crithab	Final
Slender Orcutt Grass *Orcuttia tenuis* https://ecos.fws.gov/ecp/species/1063#crithab	Final
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* https://ecos.fws.gov/ecp/species/7850#crithab	Final
Vernal Pool Fairy Shrimp *Branchinecta lynchi* https://ecos.fws.gov/ecp/species/498#crithab	Final
Vernal Pool Tadpole Shrimp *Lepidurus packardi* https://ecos.fws.gov/ecp/species/2246#crithab	Final
Yellow-billed Cuckoo *Coccyzus americanus* https://ecos.fws.gov/ecp/species/3911#crithab	Proposed

United States Department of the Interior

FISH AND WILDLIFE SERVICE
San Francisco Bay-Delta Fish And Wildlife
650 Capitol Mall
Suite 8-300
Sacramento, CA 95814
Phone: (916) 930-5603 Fax: (916) 930-5654
http://kim_squires@fws.gov

In Reply Refer To: October 29, 2018
Consultation Code: 08FBDT00-2019-SLI-0033
Event Code: 08FBDT00-2019-E-00078
Project Name: Phases 4 and 5 Levee Repair

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

San Francisco Bay-Delta Fish And Wildlife
650 Capitol Mall
Suite 8-300
Sacramento, CA 95814
(916) 930-5603

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following office, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08FBDT00-2019-SLI-0033

Event Code: 08FBDT00-2019-E-00078

Project Name: Phases 4 and 5 Levee Repair

Project Type: STREAM / WATERBODY / CANALS / LEVEES / DIKES

Project Description: levee repair

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/38.938164174647724N121.65973330072472W

Counties: Butte, CA | Colusa, CA | Glenn, CA | Placer, CA | Sacramento, CA | San Joaquin, CA | Sutter, CA | Tehama, CA | Yolo, CA | Yuba, CA

Endangered Species Act Species

There is a total of 22 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Riparian Brush Rabbit *Sylvilagus bachmani riparius* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6189	Endangered
Riparian Woodrat (=san Joaquin Valley) *Neotoma fuscipes riparia* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6191	Endangered
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered

Birds

NAME	STATUS
California Clapper Rail *Rallus longirostris obsoletus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4240	Endangered
Least Bell's Vireo *Vireo bellii pusillus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **proposed** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Delta Green Ground Beetle *Elaphrus viridis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2319	Threatened
San Bruno Elfin Butterfly *Callophrys mossii bayensis* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3394	Endangered
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp *Branchinecta conservatio* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Colusa Grass *Neostapfia colusana* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5690	Threatened
Fleshy Owl's-clover *Castilleja campestris ssp. succulenta* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8095	Threatened
Large-flowered Fiddleneck *Amsinckia grandiflora* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5558	Endangered
Palmate-bracted Bird's Beak *Cordylanthus palmatus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1616	Endangered
Solano Grass *Tuctoria mucronata* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8302	Endangered

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* https://ecos.fws.gov/ecp/species/321#crithab	Final