Appendix A

National Park Service Procedural Manual #77-1: Wetland Protection - Best Management Practices

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Appendix 2: Best Management Practices and Conditions for Proposed Actions with the Potential to Have Adverse Impacts on Wetlands

The following serve as Best Management Practices (BMPs) for NPS actions that may have adverse impacts on wetlands. Additional BMPs may be appropriate depending on local conditions or special circumstances. These also serve as "conditions" that must be met for the actions listed in Section 4.2.1 of these procedures to qualify as "excepted."

1. **Effects on hydrology and fluvial processes:** Action must have only negligible to minor, new adverse effects on site hydrology and fluvial processes, including flow, circulation, velocities, hydroperiods, water level fluctuations, sediment transport, channel morphology, and so on. Care must be taken to avoid any rutting caused by vehicles or equipment.

2. **Effects on fauna:** Action must have only negligible to minor, new adverse effects on normal movement, migration, reproduction, or health of aquatic or terrestrial fauna, including at low flow conditions.

3. **Water quality protection and certification:** Action is conducted so as to avoid degrading water quality to the maximum extent practicable. Measures must be employed to prevent or control spills of fuels, lubricants, or other contaminants from entering the waterway or wetland. Action is consistent with state water quality standards and Clean Water Act Section 401 certification requirements (check with appropriate state agency).

4. **Erosion and siltation controls:** Appropriate erosion and siltation controls must be maintained during construction, and all exposed soil or fill material must be permanently stabilized at the earliest practicable date.

5. **Proper maintenance:** Structure or fill must be properly maintained so as to avoid adverse impacts on aquatic environments or public safety.

6. **Heavy equipment use:** Heavy equipment use in wetlands must be avoided if at all possible. Heavy equipment used in wetlands must be placed on mats, or other measures must be taken to minimize soil and plant root disturbance and to preserve preconstruction elevations.

7. **Stockpiling material:** Whenever possible, excavated material must be placed on an upland site. However, when this is not feasible, temporary stockpiling of excavated material in wetlands must be placed on filter cloth, mats, or some other semipermeable surface, or comparable measures must be taken to ensure that underlying wetland habitat is protected. Runoff from stockpiled material must be controlled with silt fencing, filter cloth, coir wattles or other appropriate means to prevent reentry into the waterway or wetland.

8. **Removal of stockpiles and other temporary disturbances during construction:** Temporary stockpiles in wetlands must be removed in their entirety as soon as practicable. Wetland areas temporarily disturbed by stockpiling or other activities during construction must be returned to their pre-existing elevations, and soil, hydrology, and native vegetation communities must be restored as soon as practicable.

9. **Topsoil storage and reuse:** Revegetation of disturbed soil areas should be facilitated by salvaging and storing existing topsoil and reusing it in restoration efforts in accordance with NPS policies and guidance. Topsoil storage must be for as short a time as possible to prevent loss of seed and root viability, loss of organic matter, and degradation of the soil microbial community.

10. **Native plants:** Where plantings or seeding are required, native plant material must be obtained and used in accordance with NPS policies and guidance. Management techniques must be implemented to foster rapid development of target native plant communities and to eliminate invasion by exotic or other undesirable species.

11. **Boardwalk elevations:** Minimizing shade impacts, to the extent practicable, should be a consideration in designing boardwalks and similar structures. (Placing a boardwalk at an elevation above the vegetation surface at least equal to the width of the boardwalk is one way to minimize shading.)

12. **Wild and Scenic Rivers:** If the action qualifies as a water resources project pursuant to Section 7(a) of the Wild and Scenic Rivers Act, then appropriate project review and documentation requirements under Section 7(a) are required.

13. **Coastal zone management:** Action must be consistent, to the maximum extent practicable, with state coastal zone management programs.

14. **Endangered species:** Action must not jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, including degradation of critical habitat (see *NPS Management Policies 2006* and guidance on threatened and endangered species).

15. **Historic properties:** Action must not have adverse effects on historic properties listed or eligible for listing in the National Register of Historic Places.

Appendix B
Scoping Comments

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April 24, 2017

Dear Park Service:

I am in full agreement with the process of removing the cabins in Jewel and Tocaloma and also eliminating the berms and levys that inhibited the flow of the main creek bed and streams that feed into the main stem.

I am hoping that we can involve the public as much as possible in the rehabilitation of Lagunitas creek by people,

through the internet and media (news papers, T.V., radio etc.) to get as many young people and children involved as possible to take pride and responsibility for this project.

I work as a volunteer with not only Golden Gate National Recreation Park but also Point Reyes National Seashore and watch children as well as adults take delight in the experience of hands on work with nature especially those who live nearby and can appreciate the love and delight we share in helping nature thrive around us.

Thank You for this wonderful project!

Walter Hoffman
Bolinas

Marin Audubon Society

P.O. Box 599 | Mill Valley, CA 94942-0599 | marinaudubon.org

April 27, 2017

Lagunitas Overwinter EA
Cicily Muldoon, Superintendent
Pt. Reyes National Seashore
1 Bear Valley Road
Pt. Reyes Station, CA 94956

Dear Ms. Muldoon:

Thank you for the opportunity to comment on the riparian and enhancement project'.
As described in the notice, the project will consist of widening the creek and extending the floodplain by removing fill and retaining walls, excavating selective side channels and the placement of woody debris. As the primary Coho salmon habitat, a successful restoration/enhancement project such as this would be a great benefit to these and the many other species that depend on the creek. We have just several points:

The project will remove structures associated with an historic housing development. It would be helpful if these were marked on the site plan attached with the notice... It is unclear whether any of the structures shown on Figure 1 would be removed. We recall from the presentation at the Lagunitas Technical Advisory Committee meeting that the structures being removed were unoccupied and dilapidated. We suggest that a goal be the removal of all of the structures, unoccupied/abandoned and currently occupied structures, on federal lands and that the creek be restored in these areas. Should there be insufficient funds to remove them now, we suggest that additional funds be sought for later removal. The creek should not be restricted because there are buildings on public lands that are in use. Habitat restoration should be the primary use for public lands.

We also suggest that the project proponents continue to make presentations at the Lagunitas Technical Advisory Committee as the design becomes more specific. The past presentation was helpful and we expect future input would be similarly constructive..
Thanks for considering our comments.

Sincerely,

Barbara Salzman, Co-chair
Conservation Committee

Phil Peterson, Co-chair
Conservation Committee

United States Department of the Interior

NATIONAL PARK SERVICE
Point Reyes National Seashore
Point Reyes, California 94956

IN REPLY REFER TO:

L7617

MAR 24 2017

Notice of Scoping: Lagunitas Creek-Tocaloma/Jewell Floodplain and Riparian Enhancement Project

Dear Interested Party:

The Salmon Protection and Watershed Network (SPAWN) has proposed extensive floodplain restoration and riparian habitat enhancement on National Park Service lands in the Jewell and Tocaloma areas of Lagunitas Creek. This reach of Lagunitas Creek has been identified as an opportunity to restore high value off channel habitat for juvenile salmonids. In addition, modifications to and enhancement of the floodplain can be expected to improve geomorphic function and channel form within the creek. Significant areas of floodplain that can provide crucial habitat for coho and other salmonids when restored exist within the identified study area.

In accordance with the National Environmental Policy Act, the SPAWN is beginning preparation of an Environmental Assessment for the National Park Service. The 30-day scoping period for the public to comment on the proposed activities will end on **Monday, April 24, 2017.**

Scoping is the first step to involve the public in the NEPA process. The objective is to engage agencies, organizations, and the public early in the EA development process to receive input on the proposed action, to identify environmental issues that should be addressed in the EA, potential alternatives, and sources of data that should be considered. Scoping allows agency and public concerns to be identified early and helps focus the analysis on important issues.

Proposed Action
SPAWN proposes to enhance natural hydrological processes and riparian habitat complexity within the mile-long riparian corridor encompassing all developed sites within the Jewell and Tocaloma reach within Lagunitas Creek. Implementation of the proposed project would promote the formation of more frequently active side channels and floodplain areas, features that would provide additional critical winter habitat for juvenile coho salmon and steelhead, while improving sediment metering and sorting, and water quality conditions.

The primary method proposed for modifying creek hydrology is to remove fill, concrete retaining walls, and bulkheads from the floodplain, associated with the historic housing development, and excavate selective side channel and alcove features adjacent to the main

stem that would be activated over a range of stream flows. Additionally, creek hydrology would be encouraged to inundate floodplain areas and excavated side channels through the installation of engineered woody debris structures (LWD) in the main channel and floodplain areas to help spread the flows out across the floodplain while deflecting flows into the excavated floodplain side channels and alcoves on a more frequent basis (flows between 50 and 150 cubic feet per second, approximately). The side channels and alcoves would include the installation of LWD structures to add cover and habitat complexity for salmonids and provide hydraulic controls to maintain intended hydrologic and geomorphic function. Another result of the project will be to reduce the channel slope, through the project area and spread flows across the valley floor. This would distribute the energy of the flow over a broader area, reducing stress on the stream bed, and reducing stream bed mobility and bed scour. The large wood structures and floodplain channel features will sort, meter, and store fine sediment, particularly in the floodplain, thereby substantially enhancing the stream in the main channel.

The furthest downstream site at the existing TIRN/SPAWN offices would also see the realignment of a tributary stream that was relocated to flow away from the historic housing development and lost its natural connection to Lagunitas Creek through the installation of a fill and containment berms. The tributary stream would be reconnected with Lagunitas Creek through the removal of the berm and excavation of a new channel. Passive loading of wood in the riparian corridor through the mile-long project area would also be done to facilitate natural requirement of wood into the channel over a range of flows. These wood pieces would be placed along the channel using heavy equipment and would be recruited into the channel over time. Revegetation using native materials and local genetic plant stock would be done across the entire mile-long corridor, with heavy seeding, planting, and biotechnical treatments done at graded sites to stabilize slopes, side channel, alcoves, and floodplain areas. Non-native invasive plants including Himalayan blackberry, poison hemlock, and Japanese Knotweed would be removed through manual treatments throughout the mile-long corridor and mature native conifer and hardwood trees would be planted in the corridor to increase wood volumes in the channel over time and provide habitat to native riparian species.

Project construction would occur during the late summer and early fall months (August – October) to work outside of the sensitive bird nesting or salmonid spawning seasons. The Phase I (sites 1, and 2) would be constructed in 2018 with the Phase II (site 3) constructed when the NPS and SPAWN determine the office buildings are no longer suitable for occupancy.

SPAWN received funding from the California Department of Fish and Wildlife in 2014 to conduct a feasibility study of the restoration opportunities at the site, and received funding from the State Coastal Conservancy in 2016 to complete engineering designs, permitting, and state and federal compliance documents. The impacts analysis focuses on the mile-long stretch of Lagunitas Creek, including Tocaloma and Jewell, located entirely within the Golden Gate National Recreation Area. This NPS jurisdiction requires NPS review and approval. The CEQA analysis will be completed in an Initial Study as part of the cumulative impact analysis.

How to Comment
The 30-day comment period will close on April 24, 2017. You are encouraged to participate by submitting comments online or by letter. The preferred method for submitting comments is via the internet through the NPS Planning, Environment and Public Comment site at http://parkplanning.nps.gov/pore. From the main page, click on the "SPAWN Lagunitas Tocaloma/Jewell Floodplain and Riparian Enhancement Project" and then click the "Open for Comment" project link on the left column of the page to comment. You may also mail or hand deliver comments to the "SPAWN Lagunitas Project Scoping" c/o Superintendent, Point Reyes National Seashore, 1 Bear Valley Road, Point Reyes Station, CA 94956. The end of the comment period is Monday, **April 24, 2017**.

Comments will not be accepted by FAX, email, or in any other way than those specified above. Bulk comments in any format (hard copy or electronic) submitted on behalf of others will not be accepted. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publically available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Project Timeline
March 24, 2017: Public Scoping Period
Fall 2017: Release EA for public review and comment
Winter 2017/18: planning process complete
Summer 2018: Restoration activities begin.

If you have any questions, please contact John Dell'Osso, Chief of Interpretation and Education at 415-464-5135, or John_A_Dell'Osso@nps.gov. We appreciate your participation in this process.

Sincerely,

Cicely A. Muldoon
Superintendent

Enclosures:
- Project Summary
- Site Map

Proposed Project Summary:
Lagunitas Creek-Tocaloma/Jewell Floodplain and Riparian Enhancement Project

Summary

The Salmon Protection and Watershed Network (SPAWN) has proposed extensive floodplain restoration and riparian habitat enhancement on National Park Service lands in the Jewell and Tocaloma areas of Lagunitas Creek. This reach of Lagunitas Creek has been identified as an opportunity to restore high value off channel habitat for juvenile salmonids. In addition, modifications to and enhancement of the floodplain can be expected to improve geomorphic function and channel form within the creek. Significant areas of floodplain that can provide crucial habitat for coho and other salmonids when restored exist within the identified study area.

Need for Action

The Lagunitas Creek Watershed is designated as critical habitat for the coho salmon (Onchorynchus kisutch) and steelhead trout (O. mykiss) listed under the Endangered Species Act as endangered and threatened, respectively, by the National Marine Fisheries Service. Coho and steelhead are both anadromous salmonids that occupy coastal California streams from parts of southern California up into Oregon. Both species have declined significantly throughout their range in California compared to historic numbers (Stillwater Sciences 2008, NMFS 2012 and 2015) with coho in central California considered to be on the verge of extinction (NMFS 2012). Lagunitas Creek represents one of the largest and most stable populations of coho salmon throughout the state. The steelhead population in Lagunitas Creek is considered to be an essential population for the recovery of steelhead in central California (Stillwater Sciences 2008, NMFS 2015). In addition, Lagunitas Creek supports a robust population of the federally listed endangered California freshwater shrimp (Syncaris pacifica). Of the roughly 20 streams known to support California freshwater shrimp throughout its limited range of only Marin, Sonoma, and Napa Counties, Lagunitas Creek has been the highest rated stream for its abundance and distribution of shrimp (USFWS 1998). It is also the only stream where the shrimp occur on protected lands.

Based on extensive scientific literature regarding the conditions and life history needs of salmonids in Laguntias Creek, and on goals outlined in planning documents of the National Park Service (NPS), SPAWN has recognized the rare opportunity to restore critical off-channel floodplain habitats and assist NPS with implementation of park facilities plans for the benefit of coho salmon, steelhead, California freshwater shrimp, and other aquatic species in Lagunitas Creek.

Project Location

Lagunitas Creek is located in western Marin County, with a significant portion of the lower part of the creek flowing through NPS lands within the Golden Gate National Recreation Area and Point Reyes National Seashore. The creek stretches approximately 22 miles from its headwaters on Mt. Tamalpais to its mouth at the tidal estuary wetlands located at the southeast end of Tomales Bay.

SPAWN received funding from the California Department of Fish and Wildlife in 2014 to conduct a feasibility study of the restoration opportunities at the site, and received funding from the State Coastal Conservancy in 2016 to complete engineering designs, permitting, and state and federal compliance documents. The impacts analysis focuses on the mile-long stretch of Lagunitas Creek, including Tocaloma and Jewell, located entirely within the Golden Gate National Recreation Area. This NPS jurisdiction requires NPS review and approval. The CEQA analysis will be completed in the forthcoming IS as part of the cumulative impact analysis.

Background

The project site is located in Marin County, at river mile 6.4 (approximately) of Lagunitas Creek, measured from the Highway 1 Bridge in Point Reyes Station. The downstream limit of the project area is

the Turtle Island Network/Salmon Protection and Watershed Network (SPAWN) office and extends upstream approximately 4,500 feet to the border of Samuel P. Taylor State Park.

Summer homes were built in the Jewell and Tocaloma areas beginning in 1934 on the land between Sir Francis Drake Blvd and Lagunitas Creek. The properties were transformed the natural site conditions, including alterations to the creek and floodplain, and placement of roughly 150,000 cubic yards of fill across these properties (ESA & SPAWN 2016). The NPS acquired most of these properties in the early 1980s, and the Reservations of Use expired in the early 2000s. In 2005, many of these structures were flooded by Lagunitas Creek. In 2016, the NPS removed hazardous and abandoned residential structures from 7 of the properties in Jewell and Tocaloma.

The project reach has several old concrete retaining walls and bulkheads, walkways, decks, and other associated hard-scape areas. These features have increased and modified local runoff, reduced infiltration and disrupted natural hydrologic and geomorphic processes. Over time, non-native vegetation has established throughout the parcels, compromising the extents and density of native vegetation, thereby degrading terrestrial and aquatic habitat values.

Functioning floodplains provide critical rearing habitat during typical seasonal flows and also provide high flow refugia during high flow storm events. Previous studies of the Lagunitas Creek watershed have documented winter habitat as the limiting factor for both coho salmon and steelhead. Both juvenile coho salmon and steelhead suffer the most concentrated population declines between fall and spring annually, with coho declines being the most dramatic.

Proposed Action

SPAWN proposes to enhance natural hydrological processes and riparian habitat complexity within the roughly mile-long riparian corridor encompassing all developed sites within the Jewell and Tocaloma reach within Lagunitas Creek. Implementation of the proposed project would promote the formation of more frequently activated side channels and floodplain areas, features that would provide additional critical winter habitat for juvenile coho salmon and steelhead, while improving sediment metering and sorting, and water quality conditions.

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excavation of a new channel. Passive loading of wood in the riparian corridor through the mile-long project area would also be done to facilitate natural requirement of wood into the channel over a range of flows. These wood pieces would be placed along the channel using heavy equipment and would be recruited into the channel over time. Revegetation using native materials and local genetic plant stock would be done across the entire mile-long corridor, with heavy seeding, planting, and biotechnical treatments done at graded sites to stabilize slopes, side channel, alcoves, and floodplain areas. Non-native invasive plants including Himalayan blackberry, poison hemlock, and Japanese Knotweed would be removed through manual treatments throughout the mile-long corridor and mature native conifer and hardwood trees would be planted in the corridor to increase wood volumes in the channel over time and provide habitat to native riparian species.

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References

Environmental Science Associates and Salmon Protection and Watershed Network 2016. Lagunitas Creek Floodplain and Riparian Enhancement Project. Feasibility Study. California Department of Fish and Wildlife. March 2016.

Stillwater Sciences 2008. Limiting Factors Analysis, Limiting Factors for Coho Salmon and Steelhead. Prepared for Marin Conservation District. Stillwater Sciences. March 2008.

National Marine Fisheries Service (NMFS). 2012. Final Recovery Plan for Central California Coast coho salmon Evolutionarily Significant Unit. National Marine Fisheries Service, Southwest Region, Santa Rosa, California.

National Marine Fisheries Service (NMFS). 2015. Public Draft Coastal Multispecies Recovery Plan. National Marine Fisheries Service, West Coast Region, Santa Rosa, California.

U.S. Fish and Wildlife Service (USFWS). 1998. California Freshwater Shrimp (Syncaris pacifica Holmes) Recovery Plan. U.S. Fish and Wildlife Service, Portland, Oregon 94 pp.

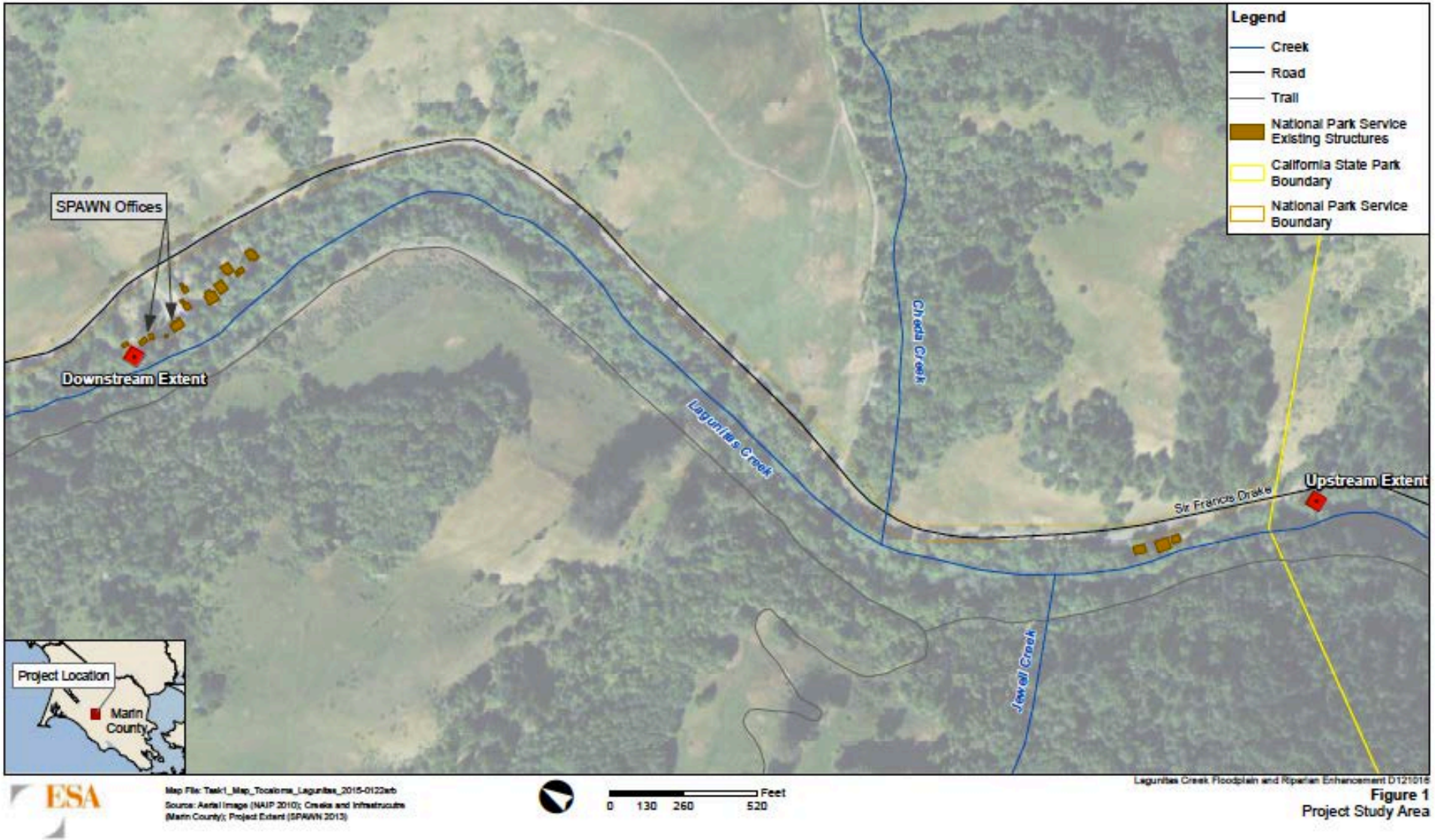

Figure 1: Site map showing the project area, with SPAWN offices at the downstream extent and the boarder with Samuel P. Taylor State Park at the upstream extent.

Appendix C
Air Quality Data

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Lagunitas Creek Flood Riparian Enhancement

Marin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	6.30	Acre	6.30	274,428.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	69
Climate Zone	5			**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

Lagunitas Creek Flood Riparian Enhancement - Marin County, Annual

Project Characteristics -

Land Use -

Construction Phase - Restoration phase schedule provided by Jorgen Blomber ESA May 10, 2017.

Off-road Equipment -

Trips and VMT - Assumed 970 haul trips from site 1 and 400 haul trips from site 2.

Off-road Equipment - Assumed construction equipment

Off-road Equipment - Assumed construction equipment

Off-road Equipment - Assumed construction equipment

Off-road Equipment - Assumed construction equipment

Off-road Equipment - Assumed construction equipment

Off-road Equipment - Assumed construction equipment

Off-road Equipment - Assumed construction equipment

Off-road Equipment - Assumed construction equipment

Off-road Equipment - Assumed construction equipment

Off-road Equipment - Assumed construction equipment

Off-road Equipment - Assumed construction equipment

Off-road Equipment - Assumed construction equipment

Construction Off-road Equipment Mitigation - Engine Tier 3 Mitigation

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Lagunitas Creek Flood Riparian Enhancement - Marin County, Annual

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tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	HaulingTripLength	20.00	30.00
tblTripsAndVMT	HaulingTripNumber	0.00	970.00
tblTripsAndVMT	HaulingTripNumber	0.00	400.00
tblTripsAndVMT	WorkerTripNumber	20.00	8.00

tblTripsAndVMT	WorkerTripNumber	25.00	8.00
tblTripsAndVMT	WorkerTripNumber	15.00	8.00

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					
2018	0.2645	2.9570	1.6146	3.3700e-003	0.9304	0.1391	1.0695	0.5039	0.1280	0.6319	0.0000	313.0667	313.0667	0.0751	0.0000	314.9429
Maximum	**0.2645**	**2.9570**	**1.6146**	**3.3700e-003**	**0.9304**	**0.1391**	**1.0695**	**0.5039**	**0.1280**	**0.6319**	**0.0000**	**313.0667**	**313.0667**	**0.0751**	**0.0000**	**314.9429**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.0759	1.5267	1.7365	3.3700e-003	0.9304	0.0602	0.9905	0.5039	0.0601	0.5640	0.0000	313.0664	313.0664	0.0751	0.0000	314.9426
Maximum	**0.0759**	**1.5267**	**1.7365**	**3.3700e-003**	**0.9304**	**0.0602**	**0.9905**	**0.5039**	**0.0601**	**0.5640**	**0.0000**	**313.0664**	**313.0664**	**0.0751**	**0.0000**	**314.9426**

	ROG	NOx	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	**71.30**	**48.37**	**-7.55**	**0.00**	**0.00**	**56.75**	**7.38**	**0.00**	**53.06**	**10.75**	**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)
5	7-7-2018	9-30-2018	2.9445	1.4582
		Highest	2.9445	1.4582

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.5900e-003	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1000e-004	1.1000e-004	0.0000	0.0000	1.2000e-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	0.0000
Mobile	0.0141	0.0486	0.1607	4.7000e-004	0.0403	6.1000e-004	0.0409	0.0108	5.8000e-004	0.0114	0.0000	43.0709	43.0709	1.6200e-003	0.0000	43.1114
Waste						0.0000	0.0000		0.0000	0.0000	0.1096	0.0000	0.1096	6.4800e-003	0.0000	0.2716
Water						0.0000	0.0000		0.0000	0.0000	0.0000	7.6429	7.6429	3.5000e-004	7.0000e-005	7.6728
Total	**0.0167**	**0.0486**	**0.1608**	**4.7000e-004**	**0.0403**	**6.1000e-004**	**0.0409**	**0.0108**	**5.8000e-004**	**0.0114**	**0.1096**	**50.7139**	**50.8235**	**8.4500e-003**	**7.0000e-005**	**51.0559**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.5900e-003	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1000e-004	1.1000e-004	0.0000	0.0000	1.2000e-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	0.0000
Mobile	0.0141	0.0486	0.1607	4.7000e-004	0.0403	6.1000e-004	0.0409	0.0108	5.8000e-004	0.0114	0.0000	43.0709	43.0709	1.6200e-003	0.0000	43.1114
Waste						0.0000	0.0000		0.0000	0.0000	0.1096	0.0000	0.1096	6.4800e-003	0.0000	0.2716
Water						0.0000	0.0000		0.0000	0.0000	0.0000	7.6429	7.6429	3.5000e-004	7.0000e-005	7.6728
Total	**0.0167**	**0.0486**	**0.1608**	**4.7000e-004**	**0.0403**	**6.1000e-004**	**0.0409**	**0.0108**	**5.8000e-004**	**0.0114**	**0.1096**	**50.7139**	**50.8235**	**8.4500e-003**	**7.0000e-005**	**51.0559**

	ROG	NOx	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	Demolition1	Demolition	7/9/2018	7/27/2018	5	15	
2	Site Preparation1	Site Preparation	7/9/2018	9/28/2018	5	60	
3	Demolition2	Demolition	7/16/2018	8/3/2018	5	15	
4	Site Preparation2	Site Preparation	7/16/2018	9/28/2018	5	55	
5	Site Preparation3	Site Preparation	7/16/2018	9/28/2018	5	55	
6	Site Preparation4	Site Preparation	7/23/2018	8/17/2018	5	20	
7	Site Preparation5	Site Preparation	7/23/2018	8/3/2018	5	10	
8	Site Preparation6	Site Preparation	7/23/2018	8/17/2018	5	20	
9	Site Preparation7	Site Preparation	7/30/2018	8/24/2018	5	20	
10	Site Preparation8	Site Preparation	7/30/2018	8/24/2018	5	20	
11	Site Preparation9	Site Preparation	8/20/2018	8/31/2018	5	10	
12	Site Preparatino10	Site Preparation	8/27/2018	9/7/2018	5	10	

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
Site Preparation1	Excavators	1	8.00	158	0.38
Site Preparation1	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation1	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Demolition1	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Demolition1	Excavators	1	8.00	158	0.38
Site Preparation9	Excavators	1	8.00	158	0.38
Site Preparation2	Excavators	1	8.00	158	0.38
Site Preparation2	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation2	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation3	Excavators	1	8.00	158	0.38
Site Preparation3	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation3	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Demolition2	Excavators	1	8.00	158	0.38
Demolition2	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation4	Excavators	1	8.00	158	0.38
Site Preparation4	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation4	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation5	Excavators	1	8.00	158	0.38
Site Preparation5	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation5	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation6	Excavators	1	8.00	158	0.38
Site Preparation6	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation6	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation7	Excavators	1	8.00	158	0.38
Site Preparation7	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation7	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation8	Excavators	1	8.00	158	0.38
Site Preparation8	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation8	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation9	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation9	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Site Preparatino10	Excavators	1	8.00	158	0.38
Site Preparatino10	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparatino10	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
Site Preparation1	3	8.00	0.00	0.00	10.80	6.60	30.00	LD_Mix	HDT_Mix	HHDT
Demolition1	8	8.00	0.00	970.00	10.80	6.60	30.00	LD_Mix	HDT_Mix	HHDT
Site Preparation2	3	8.00	0.00	0.00	10.80	6.60	30.00	LD_Mix	HDT_Mix	HHDT
Site Preparation3	3	8.00	0.00	0.00	10.80	6.60	30.00	LD_Mix	HDT_Mix	HHDT
Demolition2	6	8.00	0.00	400.00	10.80	6.60	30.00	LD_Mix	HDT_Mix	HHDT
Site Preparation4	3	8.00	0.00	0.00	10.80	6.60	30.00	LD_Mix	HDT_Mix	HHDT
Site Preparation5	3	8.00	0.00	0.00	10.80	6.60	30.00	LD_Mix	HDT_Mix	HHDT
Site Preparation6	3	8.00	0.00	0.00	10.80	6.60	30.00	LD_Mix	HDT_Mix	HHDT
Site Preparation7	3	8.00	0.00	0.00	10.80	6.60	30.00	LD_Mix	HDT_Mix	HHDT
Site Preparation8	3	8.00	0.00	0.00	10.80	6.60	30.00	LD_Mix	HDT_Mix	HHDT
Site Preparation9	10	8.00	0.00	0.00	10.80	6.60	30.00	LD_Mix	HDT_Mix	HHDT
Site Preparatino10	3	8.00	0.00	0.00	10.80	6.60	30.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Clean Paved Roads

3.2 Demolition1 - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.1600e-003	0.0429	0.0421	6.0000e-005		2.5200e-003	2.5200e-003		2.3200e-003	2.3200e-003	0.0000	5.6633	5.6633	1.7600e-003	0.0000	5.7074
Total	**4.1600e-003**	**0.0429**	**0.0421**	**6.0000e-005**		**2.5200e-003**	**2.5200e-003**		**2.3200e-003**	**2.3200e-003**	**0.0000**	**5.6633**	**5.6633**	**1.7600e-003**	**0.0000**	**5.7074**

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	7.0800e-003	0.2176	0.0674	5.6000e-004	0.0122	9.9000e-004	0.0132	3.3600e-003	9.5000e-004	4.3100e-003	0.0000	54.8778	54.8778	3.0700e-003	0.0000	54.9545
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	2.5000e-004	1.8000e-004	1.7800e-003	0.0000	4.7000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4486	0.4486	1.0000e-005	0.0000	0.4489
Total	**7.3300e-003**	**0.2178**	**0.0692**	**5.6000e-004**	**0.0127**	**9.9000e-004**	**0.0137**	**3.4900e-003**	**9.5000e-004**	**4.4400e-003**	**0.0000**	**55.3263**	**55.3263**	**3.0800e-003**	**0.0000**	**55.4034**

3.2 Demolition1 - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.5200e-003	0.0314	0.0470	6.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	5.6633	5.6633	1.7600e-003	0.0000	5.7074
Total	**1.5200e-003**	**0.0314**	**0.0470**	**6.0000e-005**		**1.8000e-003**	**1.8000e-003**		**1.8000e-003**	**1.8000e-003**	**0.0000**	**5.6633**	**5.6633**	**1.7600e-003**	**0.0000**	**5.7074**

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	7.0800e-003	0.2176	0.0674	5.6000e-004	0.0122	9.9000e-004	0.0132	3.3600e-003	9.5000e-004	4.3100e-003	0.0000	54.8778	54.8778	3.0700e-003	0.0000	54.9545
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	2.5000e-004	1.8000e-004	1.7800e-003	0.0000	4.7000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4486	0.4486	1.0000e-005	0.0000	0.4489
Total	**7.3300e-003**	**0.2178**	**0.0692**	**5.6000e-004**	**0.0127**	**9.9000e-004**	**0.0137**	**3.4900e-003**	**9.5000e-004**	**4.4400e-003**	**0.0000**	**55.3263**	**55.3263**	**3.0800e-003**	**0.0000**	**55.4034**

3.3 Site Preparation1 - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0516	0.5486	0.2997	5.0000e-004		0.0284	0.0284		0.0261	0.0261	0.0000	46.0632	46.0632	0.0143	0.0000	46.4217
Total	**0.0516**	**0.5486**	**0.2997**	**5.0000e-004**	**0.1807**	**0.0284**	**0.2091**	**0.0993**	**0.0261**	**0.1255**	**0.0000**	**46.0632**	**46.0632**	**0.0143**	**0.0000**	**46.4217**

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	1.0000e-003	7.4000e-004	7.1100e-003	2.0000e-005	1.8900e-003	1.0000e-005	1.9000e-003	5.0000e-004	1.0000e-005	5.2000e-004	0.0000	1.7943	1.7943	5.0000e-005	0.0000	1.7956
Total	**1.0000e-003**	**7.4000e-004**	**7.1100e-003**	**2.0000e-005**	**1.8900e-003**	**1.0000e-005**	**1.9000e-003**	**5.0000e-004**	**1.0000e-005**	**5.2000e-004**	**0.0000**	**1.7943**	**1.7943**	**5.0000e-005**	**0.0000**	**1.7956**

3.3 Site Preparation1 - 2018

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					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0124	0.2470	0.3237	5.0000e-004		0.0118	0.0118		0.0118	0.0118	0.0000	46.0632	46.0632	0.0143	0.0000	46.4217
Total	**0.0124**	**0.2470**	**0.3237**	**5.0000e-004**	**0.1807**	**0.0118**	**0.1925**	**0.0993**	**0.0118**	**0.1111**	**0.0000**	**46.0632**	**46.0632**	**0.0143**	**0.0000**	**46.4217**

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	1.0000e-003	7.4000e-004	7.1100e-003	2.0000e-005	1.8900e-003	1.0000e-005	1.9000e-003	5.0000e-004	1.0000e-005	5.2000e-004	0.0000	1.7943	1.7943	5.0000e-005	0.0000	1.7956
Total	**1.0000e-003**	**7.4000e-004**	**7.1100e-003**	**2.0000e-005**	**1.8900e-003**	**1.0000e-005**	**1.9000e-003**	**5.0000e-004**	**1.0000e-005**	**5.2000e-004**	**0.0000**	**1.7943**	**1.7943**	**5.0000e-005**	**0.0000**	**1.7956**

3.4 Demolition2 - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.1600e-003	0.0429	0.0421	6.0000e-005		2.5200e-003	2.5200e-003		2.3200e-003	2.3200e-003	0.0000	5.6633	5.6633	1.7600e-003	0.0000	5.7074
Total	**4.1600e-003**	**0.0429**	**0.0421**	**6.0000e-005**		**2.5200e-003**	**2.5200e-003**		**2.3200e-003**	**2.3200e-003**	**0.0000**	**5.6633**	**5.6633**	**1.7600e-003**	**0.0000**	**5.7074**

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	2.9200e-003	0.0897	0.0278	2.3000e-004	5.0400e-003	4.1000e-004	5.4500e-003	1.3900e-003	3.9000e-004	1.7800e-003	0.0000	22.6300	22.6300	1.2700e-003	0.0000	22.6617
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	2.5000e-004	1.8000e-004	1.7800e-003	0.0000	4.7000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4486	0.4486	1.0000e-005	0.0000	0.4489
Total	**3.1700e-003**	**0.0899**	**0.0296**	**2.3000e-004**	**5.5100e-003**	**4.1000e-004**	**5.9300e-003**	**1.5200e-003**	**3.9000e-004**	**1.9100e-003**	**0.0000**	**23.0786**	**23.0786**	**1.2800e-003**	**0.0000**	**23.1106**

3.4 Demolition2 - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.5200e-003	0.0314	0.0470	6.0000e-005		1.8000e-003	1.8000e-003		1.8000e-003	1.8000e-003	0.0000	5.6633	5.6633	1.7600e-003	0.0000	5.7074
Total	**1.5200e-003**	**0.0314**	**0.0470**	**6.0000e-005**		**1.8000e-003**	**1.8000e-003**		**1.8000e-003**	**1.8000e-003**	**0.0000**	**5.6633**	**5.6633**	**1.7600e-003**	**0.0000**	**5.7074**

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	2.9200e-003	0.0897	0.0278	2.3000e-004	5.0400e-003	4.1000e-004	5.4500e-003	1.3900e-003	3.9000e-004	1.7800e-003	0.0000	22.6300	22.6300	1.2700e-003	0.0000	22.6617
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	2.5000e-004	1.8000e-004	1.7800e-003	0.0000	4.7000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4486	0.4486	1.0000e-005	0.0000	0.4489
Total	**3.1700e-003**	**0.0899**	**0.0296**	**2.3000e-004**	**5.5100e-003**	**4.1000e-004**	**5.9300e-003**	**1.5200e-003**	**3.9000e-004**	**1.9100e-003**	**0.0000**	**23.0786**	**23.0786**	**1.2800e-003**	**0.0000**	**23.1106**

3.5 Site Preparation2 - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1656	0.0000	0.1656	0.0910	0.0000	0.0910	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0473	0.5029	0.2747	4.6000e-004		0.0260	0.0260		0.0240	0.0240	0.0000	42.2246	42.2246	0.0132	0.0000	42.5533
Total	**0.0473**	**0.5029**	**0.2747**	**4.6000e-004**	**0.1656**	**0.0260**	**0.1917**	**0.0910**	**0.0240**	**0.1150**	**0.0000**	**42.2246**	**42.2246**	**0.0132**	**0.0000**	**42.5533**

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	9.1000e-004	6.8000e-004	6.5100e-003	2.0000e-005	1.7300e-003	1.0000e-005	1.7500e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.6448	1.6448	5.0000e-005	0.0000	1.6460
Total	**9.1000e-004**	**6.8000e-004**	**6.5100e-003**	**2.0000e-005**	**1.7300e-003**	**1.0000e-005**	**1.7500e-003**	**4.6000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**1.6448**	**1.6448**	**5.0000e-005**	**0.0000**	**1.6460**

3.5 Site Preparation2 - 2018

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					0.1656	0.0000	0.1656	0.0910	0.0000	0.0910	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0113	0.2264	0.2967	4.6000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	42.2246	42.2246	0.0132	0.0000	42.5532
Total	**0.0113**	**0.2264**	**0.2967**	**4.6000e-004**	**0.1656**	**0.0108**	**0.1764**	**0.0910**	**0.0108**	**0.1019**	**0.0000**	**42.2246**	**42.2246**	**0.0132**	**0.0000**	**42.5532**

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	9.1000e-004	6.8000e-004	6.5100e-003	2.0000e-005	1.7300e-003	1.0000e-005	1.7500e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.6448	1.6448	5.0000e-005	0.0000	1.6460
Total	**9.1000e-004**	**6.8000e-004**	**6.5100e-003**	**2.0000e-005**	**1.7300e-003**	**1.0000e-005**	**1.7500e-003**	**4.6000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**1.6448**	**1.6448**	**5.0000e-005**	**0.0000**	**1.6460**

3.6 Site Preparation3 - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1656	0.0000	0.1656	0.0910	0.0000	0.0910	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0473	0.5029	0.2747	4.6000e-004		0.0260	0.0260		0.0240	0.0240	0.0000	42.2246	42.2246	0.0132	0.0000	42.5533
Total	**0.0473**	**0.5029**	**0.2747**	**4.6000e-004**	**0.1656**	**0.0260**	**0.1917**	**0.0910**	**0.0240**	**0.1150**	**0.0000**	**42.2246**	**42.2246**	**0.0132**	**0.0000**	**42.5533**

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	9.1000e-004	6.8000e-004	6.5100e-003	2.0000e-005	1.7300e-003	1.0000e-005	1.7500e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.6448	1.6448	5.0000e-005	0.0000	1.6460
Total	**9.1000e-004**	**6.8000e-004**	**6.5100e-003**	**2.0000e-005**	**1.7300e-003**	**1.0000e-005**	**1.7500e-003**	**4.6000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**1.6448**	**1.6448**	**5.0000e-005**	**0.0000**	**1.6460**

3.6 Site Preparation3 - 2018

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					0.1656	0.0000	0.1656	0.0910	0.0000	0.0910	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0113	0.2264	0.2967	4.6000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	42.2246	42.2246	0.0132	0.0000	42.5532
Total	**0.0113**	**0.2264**	**0.2967**	**4.6000e-004**	**0.1656**	**0.0108**	**0.1764**	**0.0910**	**0.0108**	**0.1019**	**0.0000**	**42.2246**	**42.2246**	**0.0132**	**0.0000**	**42.5532**

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	9.1000e-004	6.8000e-004	6.5100e-003	2.0000e-005	1.7300e-003	1.0000e-005	1.7500e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.6448	1.6448	5.0000e-005	0.0000	1.6460
Total	**9.1000e-004**	**6.8000e-004**	**6.5100e-003**	**2.0000e-005**	**1.7300e-003**	**1.0000e-005**	**1.7500e-003**	**4.6000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**1.6448**	**1.6448**	**5.0000e-005**	**0.0000**	**1.6460**

3.7 Site Preparation4 - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0602	0.0000	0.0602	0.0331	0.0000	0.0331	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0172	0.1829	0.0999	1.7000e-004		9.4700e-003	9.4700e-003		8.7100e-003	8.7100e-003	0.0000	15.3544	15.3544	4.7800e-003	0.0000	15.4739
Total	**0.0172**	**0.1829**	**0.0999**	**1.7000e-004**	**0.0602**	**9.4700e-003**	**0.0697**	**0.0331**	**8.7100e-003**	**0.0418**	**0.0000**	**15.3544**	**15.3544**	**4.7800e-003**	**0.0000**	**15.4739**

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	3.3000e-004	2.5000e-004	2.3700e-003	1.0000e-005	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5981	0.5981	2.0000e-005	0.0000	0.5985
Total	**3.3000e-004**	**2.5000e-004**	**2.3700e-003**	**1.0000e-005**	**6.3000e-004**	**0.0000**	**6.3000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.5981**	**0.5981**	**2.0000e-005**	**0.0000**	**0.5985**

3.7 Site Preparation4 - 2018

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					0.0602	0.0000	0.0602	0.0331	0.0000	0.0331	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1200e-003	0.0823	0.1079	1.7000e-004		3.9300e-003	3.9300e-003		3.9300e-003	3.9300e-003	0.0000	15.3544	15.3544	4.7800e-003	0.0000	15.4739
Total	**4.1200e-003**	**0.0823**	**0.1079**	**1.7000e-004**	**0.0602**	**3.9300e-003**	**0.0642**	**0.0331**	**3.9300e-003**	**0.0370**	**0.0000**	**15.3544**	**15.3544**	**4.7800e-003**	**0.0000**	**15.4739**

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	3.3000e-004	2.5000e-004	2.3700e-003	1.0000e-005	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5981	0.5981	2.0000e-005	0.0000	0.5985
Total	**3.3000e-004**	**2.5000e-004**	**2.3700e-003**	**1.0000e-005**	**6.3000e-004**	**0.0000**	**6.3000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.5981**	**0.5981**	**2.0000e-005**	**0.0000**	**0.5985**

3.8 Site Preparation5 - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0301	0.0000	0.0301	0.0166	0.0000	0.0166	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.6100e-003	0.0914	0.0499	8.0000e-005		4.7400e-003	4.7400e-003		4.3600e-003	4.3600e-003	0.0000	7.6772	7.6772	2.3900e-003	0.0000	7.7370
Total	**8.6100e-003**	**0.0914**	**0.0499**	**8.0000e-005**	**0.0301**	**4.7400e-003**	**0.0349**	**0.0166**	**4.3600e-003**	**0.0209**	**0.0000**	**7.6772**	**7.6772**	**2.3900e-003**	**0.0000**	**7.7370**

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	1.7000e-004	1.2000e-004	1.1800e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.2991	0.2991	1.0000e-005	0.0000	0.2993
Total	**1.7000e-004**	**1.2000e-004**	**1.1800e-003**	**0.0000**	**3.2000e-004**	**0.0000**	**3.2000e-004**	**8.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2991**	**0.2991**	**1.0000e-005**	**0.0000**	**0.2993**

3.8 Site Preparation5 - 2018

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					0.0301	0.0000	0.0301	0.0166	0.0000	0.0166	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0600e-003	0.0412	0.0540	8.0000e-005		1.9700e-003	1.9700e-003		1.9700e-003	1.9700e-003	0.0000	7.6772	7.6772	2.3900e-003	0.0000	7.7370
Total	**2.0600e-003**	**0.0412**	**0.0540**	**8.0000e-005**	**0.0301**	**1.9700e-003**	**0.0321**	**0.0166**	**1.9700e-003**	**0.0185**	**0.0000**	**7.6772**	**7.6772**	**2.3900e-003**	**0.0000**	**7.7370**

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	1.7000e-004	1.2000e-004	1.1800e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.2991	0.2991	1.0000e-005	0.0000	0.2993
Total	**1.7000e-004**	**1.2000e-004**	**1.1800e-003**	**0.0000**	**3.2000e-004**	**0.0000**	**3.2000e-004**	**8.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2991**	**0.2991**	**1.0000e-005**	**0.0000**	**0.2993**

3.9 Site Preparation6 - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0602	0.0000	0.0602	0.0331	0.0000	0.0331	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0172	0.1829	0.0999	1.7000e-004		9.4700e-003	9.4700e-003		8.7100e-003	8.7100e-003	0.0000	15.3544	15.3544	4.7800e-003	0.0000	15.4739
Total	**0.0172**	**0.1829**	**0.0999**	**1.7000e-004**	**0.0602**	**9.4700e-003**	**0.0697**	**0.0331**	**8.7100e-003**	**0.0418**	**0.0000**	**15.3544**	**15.3544**	**4.7800e-003**	**0.0000**	**15.4739**

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	3.3000e-004	2.5000e-004	2.3700e-003	1.0000e-005	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5981	0.5981	2.0000e-005	0.0000	0.5985
Total	**3.3000e-004**	**2.5000e-004**	**2.3700e-003**	**1.0000e-005**	**6.3000e-004**	**0.0000**	**6.3000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.5981**	**0.5981**	**2.0000e-005**	**0.0000**	**0.5985**

3.9 Site Preparation6 - 2018

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					0.0602	0.0000	0.0602	0.0331	0.0000	0.0331	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1200e-003	0.0823	0.1079	1.7000e-004		3.9300e-003	3.9300e-003		3.9300e-003	3.9300e-003	0.0000	15.3544	15.3544	4.7800e-003	0.0000	15.4739
Total	**4.1200e-003**	**0.0823**	**0.1079**	**1.7000e-004**	**0.0602**	**3.9300e-003**	**0.0642**	**0.0331**	**3.9300e-003**	**0.0370**	**0.0000**	**15.3544**	**15.3544**	**4.7800e-003**	**0.0000**	**15.4739**

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	3.3000e-004	2.5000e-004	2.3700e-003	1.0000e-005	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5981	0.5981	2.0000e-005	0.0000	0.5985
Total	**3.3000e-004**	**2.5000e-004**	**2.3700e-003**	**1.0000e-005**	**6.3000e-004**	**0.0000**	**6.3000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.5981**	**0.5981**	**2.0000e-005**	**0.0000**	**0.5985**

3.10 Site Preparation7 - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0602	0.0000	0.0602	0.0331	0.0000	0.0331	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0172	0.1829	0.0999	1.7000e-004		9.4700e-003	9.4700e-003		8.7100e-003	8.7100e-003	0.0000	15.3544	15.3544	4.7800e-003	0.0000	15.4739
Total	**0.0172**	**0.1829**	**0.0999**	**1.7000e-004**	**0.0602**	**9.4700e-003**	**0.0697**	**0.0331**	**8.7100e-003**	**0.0418**	**0.0000**	**15.3544**	**15.3544**	**4.7800e-003**	**0.0000**	**15.4739**

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	3.3000e-004	2.5000e-004	2.3700e-003	1.0000e-005	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5981	0.5981	2.0000e-005	0.0000	0.5985
Total	**3.3000e-004**	**2.5000e-004**	**2.3700e-003**	**1.0000e-005**	**6.3000e-004**	**0.0000**	**6.3000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.5981**	**0.5981**	**2.0000e-005**	**0.0000**	**0.5985**

3.10 Site Preparation7 - 2018

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					0.0602	0.0000	0.0602	0.0331	0.0000	0.0331	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1200e-003	0.0823	0.1079	1.7000e-004		3.9300e-003	3.9300e-003		3.9300e-003	3.9300e-003	0.0000	15.3544	15.3544	4.7800e-003	0.0000	15.4739
Total	**4.1200e-003**	**0.0823**	**0.1079**	**1.7000e-004**	**0.0602**	**3.9300e-003**	**0.0642**	**0.0331**	**3.9300e-003**	**0.0370**	**0.0000**	**15.3544**	**15.3544**	**4.7800e-003**	**0.0000**	**15.4739**

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	3.3000e-004	2.5000e-004	2.3700e-003	1.0000e-005	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5981	0.5981	2.0000e-005	0.0000	0.5985
Total	**3.3000e-004**	**2.5000e-004**	**2.3700e-003**	**1.0000e-005**	**6.3000e-004**	**0.0000**	**6.3000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.5981**	**0.5981**	**2.0000e-005**	**0.0000**	**0.5985**

3.11 Site Preparation8 - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0602	0.0000	0.0602	0.0331	0.0000	0.0331	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0172	0.1829	0.0999	1.7000e-004		9.4700e-003	9.4700e-003		8.7100e-003	8.7100e-003	0.0000	15.3544	15.3544	4.7800e-003	0.0000	15.4739
Total	**0.0172**	**0.1829**	**0.0999**	**1.7000e-004**	**0.0602**	**9.4700e-003**	**0.0697**	**0.0331**	**8.7100e-003**	**0.0418**	**0.0000**	**15.3544**	**15.3544**	**4.7800e-003**	**0.0000**	**15.4739**

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	3.3000e-004	2.5000e-004	2.3700e-003	1.0000e-005	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5981	0.5981	2.0000e-005	0.0000	0.5985
Total	**3.3000e-004**	**2.5000e-004**	**2.3700e-003**	**1.0000e-005**	**6.3000e-004**	**0.0000**	**6.3000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.5981**	**0.5981**	**2.0000e-005**	**0.0000**	**0.5985**

3.11 Site Preparation8 - 2018

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					0.0602	0.0000	0.0602	0.0331	0.0000	0.0331	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1200e-003	0.0823	0.1079	1.7000e-004		3.9300e-003	3.9300e-003		3.9300e-003	3.9300e-003	0.0000	15.3544	15.3544	4.7800e-003	0.0000	15.4739
Total	**4.1200e-003**	**0.0823**	**0.1079**	**1.7000e-004**	**0.0602**	**3.9300e-003**	**0.0642**	**0.0331**	**3.9300e-003**	**0.0370**	**0.0000**	**15.3544**	**15.3544**	**4.7800e-003**	**0.0000**	**15.4739**

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	3.3000e-004	2.5000e-004	2.3700e-003	1.0000e-005	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5981	0.5981	2.0000e-005	0.0000	0.5985
Total	**3.3000e-004**	**2.5000e-004**	**2.3700e-003**	**1.0000e-005**	**6.3000e-004**	**0.0000**	**6.3000e-004**	**1.7000e-004**	**0.0000**	**1.7000e-004**	**0.0000**	**0.5981**	**0.5981**	**2.0000e-005**	**0.0000**	**0.5985**

3.12 Site Preparation9 - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.6100e-003	0.0914	0.0499	8.0000e-005		4.7400e-003	4.7400e-003		4.3600e-003	4.3600e-003	0.0000	7.6772	7.6772	2.3900e-003	0.0000	7.7370
Total	**8.6100e-003**	**0.0914**	**0.0499**	**8.0000e-005**	**0.0903**	**4.7400e-003**	**0.0951**	**0.0497**	**4.3600e-003**	**0.0540**	**0.0000**	**7.6772**	**7.6772**	**2.3900e-003**	**0.0000**	**7.7370**

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	1.7000e-004	1.2000e-004	1.1800e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.2991	0.2991	1.0000e-005	0.0000	0.2993
Total	**1.7000e-004**	**1.2000e-004**	**1.1800e-003**	**0.0000**	**3.2000e-004**	**0.0000**	**3.2000e-004**	**8.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2991**	**0.2991**	**1.0000e-005**	**0.0000**	**0.2993**

3.12 Site Preparation9 - 2018

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					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0600e-003	0.0412	0.0540	8.0000e-005		1.9700e-003	1.9700e-003		1.9700e-003	1.9700e-003	0.0000	7.6772	7.6772	2.3900e-003	0.0000	7.7370
Total	**2.0600e-003**	**0.0412**	**0.0540**	**8.0000e-005**	**0.0903**	**1.9700e-003**	**0.0923**	**0.0497**	**1.9700e-003**	**0.0516**	**0.0000**	**7.6772**	**7.6772**	**2.3900e-003**	**0.0000**	**7.7370**

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	1.7000e-004	1.2000e-004	1.1800e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.2991	0.2991	1.0000e-005	0.0000	0.2993
Total	**1.7000e-004**	**1.2000e-004**	**1.1800e-003**	**0.0000**	**3.2000e-004**	**0.0000**	**3.2000e-004**	**8.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2991**	**0.2991**	**1.0000e-005**	**0.0000**	**0.2993**

3.13 Site Preparatino10 - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0301	0.0000	0.0301	0.0166	0.0000	0.0166	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.6100e-003	0.0914	0.0499	8.0000e-005		4.7400e-003	4.7400e-003		4.3600e-003	4.3600e-003	0.0000	7.6772	7.6772	2.3900e-003	0.0000	7.7370
Total	**8.6100e-003**	**0.0914**	**0.0499**	**8.0000e-005**	**0.0301**	**4.7400e-003**	**0.0349**	**0.0166**	**4.3600e-003**	**0.0209**	**0.0000**	**7.6772**	**7.6772**	**2.3900e-003**	**0.0000**	**7.7370**

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	1.7000e-004	1.2000e-004	1.1800e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.2991	0.2991	1.0000e-005	0.0000	0.2993
Total	**1.7000e-004**	**1.2000e-004**	**1.1800e-003**	**0.0000**	**3.2000e-004**	**0.0000**	**3.2000e-004**	**8.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2991**	**0.2991**	**1.0000e-005**	**0.0000**	**0.2993**

3.13 Site Preparatino10 - 2018

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					0.0301	0.0000	0.0301	0.0166	0.0000	0.0166	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0600e-003	0.0412	0.0540	8.0000e-005		1.9700e-003	1.9700e-003		1.9700e-003	1.9700e-003	0.0000	7.6772	7.6772	2.3900e-003	0.0000	7.7370
Total	**2.0600e-003**	**0.0412**	**0.0540**	**8.0000e-005**	**0.0301**	**1.9700e-003**	**0.0321**	**0.0166**	**1.9700e-003**	**0.0185**	**0.0000**	**7.6772**	**7.6772**	**2.3900e-003**	**0.0000**	**7.7370**

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	1.7000e-004	1.2000e-004	1.1800e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.2991	0.2991	1.0000e-005	0.0000	0.2993
Total	**1.7000e-004**	**1.2000e-004**	**1.1800e-003**	**0.0000**	**3.2000e-004**	**0.0000**	**3.2000e-004**	**8.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2991**	**0.2991**	**1.0000e-005**	**0.0000**	**0.2993**

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	0.0141	0.0486	0.1607	4.7000e-004	0.0403	6.1000e-004	0.0409	0.0108	5.8000e-004	0.0114	0.0000	43.0709	43.0709	1.6200e-003	0.0000	43.1114
Unmitigated	0.0141	0.0486	0.1607	4.7000e-004	0.0403	6.1000e-004	0.0409	0.0108	5.8000e-004	0.0114	0.0000	43.0709	43.0709	1.6200e-003	0.0000	43.1114

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	11.91	143.33	105.46	108,626	108,626
Total	11.91	143.33	105.46	108,626	108,626

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	0.581869	0.044060	0.201715	0.114585	0.018910	0.005088	0.010143	0.010297	0.002003	0.003903	0.005948	0.000680	0.000800

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	2.5900e-003	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1000e-004	1.1000e-004	0.0000	0.0000	1.2000e-004
Unmitigated	2.5900e-003	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1000e-004	1.1000e-004	0.0000	0.0000	1.2000e-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	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	2.5800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1000e-004	1.1000e-004	0.0000	0.0000	1.2000e-004
Total	**2.5900e-003**	**0.0000**	**6.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.1000e-004**	**1.1000e-004**	**0.0000**	**0.0000**	**1.2000e-004**

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	2.5800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1000e-004	1.1000e-004	0.0000	0.0000	1.2000e-004
Total	**2.5900e-003**	**0.0000**	**6.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.1000e-004**	**1.1000e-004**	**0.0000**	**0.0000**	**1.2000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	7.6429	3.5000e-004	7.0000e-005	7.6728
Unmitigated	7.6429	3.5000e-004	7.0000e-005	7.6728

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 7.50633	7.6429	3.5000e-004	7.0000e-005	7.6728
Total		**7.6429**	**3.5000e-004**	**7.0000e-005**	**7.6728**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 7.50633	7.6429	3.5000e-004	7.0000e-005	7.6728
Total		**7.6429**	**3.5000e-004**	**7.0000e-005**	**7.6728**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1096	6.4800e-003	0.0000	0.2716
Unmitigated	0.1096	6.4800e-003	0.0000	0.2716

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.54	0.1096	6.4800e-003	0.0000	0.2716
Total		**0.1096**	**6.4800e-003**	**0.0000**	**0.2716**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.54	0.1096	6.4800e-003	0.0000	0.2716
Total		**0.1096**	**6.4800e-003**	**0.0000**	**0.2716**

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

Appendix D
California Natural Diversity Database (CNDDB) Table

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Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (San Geronimo (3812216) OR Petaluma (3812226) OR Petaluma River (3812225) OR Novato (3812215) OR Point Reyes NE (3812227) OR Inverness (3812217) OR San Rafael (3712285) OR Bolinas (3712286) OR Double Point (3712287))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Abronia umbellata var. breviflora pink sand-verbena	G4G5T2 S1	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive	5 50	57 S:2	0	0	0	1	0	1	0	2	2	0	0
Adela oplerella Opler's longhorn moth	G2 S2	None None		400 1,300	14 S:3	0	0	0	0	0	3	3	0	3	0	0
Agrostis blasdalei Blasdale's bent grass	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	200 1,200	58 S:2	0	0	0	0	0	2	0	2	2	0	0
Allium peninsulare var. franciscanum Franciscan onion	G5T1 S1	None None	Rare Plant Rank - 1B.2	30 30	21 S:1	0	0	0	0	0	1	1	0	1	0	0
Alopecurus aequalis var. sonomensis Sonoma alopecurus	G5T1 S1	Endangered None	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden	40 300	21 S:2	0	0	0	1	0	1	2	0	2	0	0
Ambystoma californiense California tiger salamander	G2G3 S2S3	Threatened Threatened	CDFW_WL-Watch List IUCN_VU-Vulnerable	85 85	1150 S:2	0	1	0	0	1	0	1	1	1	1	0
Amorpha californica var. napensis Napa false indigo	G4T2 S2	None None	Rare Plant Rank - 1B.2 SB_RSABG-Rancho Santa Ana Botanic Garden	400 2,000	69 S:18	2	0	0	0	1	15	6	12	17	1	0
Amsinckia lunaris bent-flowered fiddleneck	G2G3 S2S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	400 400	64 S:3	0	0	0	0	0	3	3	0	3	0	0
Antrozous pallidus pallid bat	G5 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	40 730	408 S:14	1	2	0	1	3	7	8	6	11	3	0
Aplodontia rufa phaea Point Reyes mountain beaver	G5T2 S2	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	200 400	9 S:5	0	0	0	0	3	2	5	0	2	3	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Arctostaphylos montana ssp. montana Mt. Tamalpais manzanita	G3T3 S3	None None	Rare Plant Rank - 1B.3	500 2,220	15 S:15	0	1	0	0	0	14	10	5	15	0	0
Arctostaphylos virgata Marin manzanita	G2 S2	None None	Rare Plant Rank - 1B.2 SB_RSABG-Rancho Santa Ana Botanic Garden SB_USDA-US Dept of Agriculture	5 2,625	32 S:29	1	3	3	2	0	20	13	16	29	0	0
Ardea alba great egret	G5 S4	None None	CDF_S-Sensitive IUCN_LC-Least Concern	18 100	38 S:3	0	1	0	0	0	2	2	1	3	0	0
Ardea herodias great blue heron	G5 S4	None None	CDF_S-Sensitive IUCN_LC-Least Concern	18 250	138 S:7	0	1	0	0	1	5	6	1	6	1	0
Astragalus pycnostachyus var. pycnostachyus coastal marsh milk-vetch	G2T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_SBBG-Santa Barbara Botanic Garden		25 S:2	0	0	0	0	1	1	2	0	1	1	0
Astragalus tener var. tener alkali milk-vetch	G2T2 S2	None None	Rare Plant Rank - 1B.2	30 30	65 S:1	0	0	0	0	1	0	1	0	0	0	1
Athene cunicularia burrowing owl	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	-1 1,720	1936 S:7	1	2	3	0	0	1	1	6	7	0	0
Bombus caliginosus obscure bumble bee	G4? S1S2	None None	IUCN_VU-Vulnerable	50 2,500	181 S:14	0	0	0	0	0	14	13	1	14	0	0
Bombus occidentalis western bumble bee	G2G3 S1	None None	USFS_S-Sensitive XERCES_IM-Imperiled	0 2,000	282 S:14	0	0	0	0	0	14	14	0	14	0	0
Buteo swainsoni Swainson's hawk	G5 S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	120 120	2426 S:1	0	0	0	0	1	0	1	0	0	1	0
Caecidotea tomalensis Tomales isopod	G2 S2S3	None None		100 100	6 S:1	0	1	0	0	0	0	1	0	1	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Calamagrostis crassiglumis Thurber's reed grass	G3Q S2	None None	Rare Plant Rank - 2B.1		15 S:1	0	0	0	0	0	1	1	0	1	0	0
Calicina diminua Marin blind harvestman	G1 S1	None None		150 150	1 S:1	0	0	0	0	0	1	1	0	1	0	0
California macrophylla round-leaved filaree	G3? S3?	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden		162 S:1	0	0	0	0	0	1	1	0	1	0	0
Callophrys mossii bayensis San Bruno elfin butterfly	G4T1 S1	Endangered None	XERCES_CI-Critically Imperiled	780 780	10 S:1	0	0	0	0	0	1	1	0	1	0	0
Callophrys mossii marinensis Marin elfin butterfly	G4T1 S1	None None		200 200	1 S:1	0	0	0	0	0	1	1	0	1	0	0
Campanula californica swamp harebell	G3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	5 800	132 S:7	0	2	0	0	0	5	6	1	7	0	0
Cardamine angulata seaside bittercress	G5 S1	None None	Rare Plant Rank - 2B.1		5 S:1	0	0	0	0	0	1	1	0	1	0	0
Carex lyngbyei Lyngbye's sedge	G5 S3	None None	Rare Plant Rank - 2B.2	10 100	29 S:4	1	1	0	0	0	2	2	2	4	0	0
Castilleja affinis var. neglecta Tiburon paintbrush	G4G5T1T2 S1S2	Endangered Threatened	Rare Plant Rank - 1B.2 SB_UCBBG-UC Berkeley Botanical Garden	900 900	7 S:1	0	1	0	0	0	0	0	1	1	0	0
Castilleja ambigua var. humboldtiensis Humboldt Bay owl's-clover	G4T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	5 6	31 S:3	1	2	0	0	0	0	0	3	3	0	0
Ceanothus decornutus Nicasio ceanothus	G1 S1	None None	Rare Plant Rank - 1B.2	800 950	2 S:2	0	0	0	0	0	2	0	2	2	0	0
Ceanothus gloriosus var. porrectus Mt. Vision ceanothus	G4T2 S2	None None	Rare Plant Rank - 1B.3	60 1,000	18 S:3	0	2	0	0	0	1	0	3	3	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Ceanothus masonii Mason's ceanothus	G1 S1	None Rare	Rare Plant Rank - 1B.2 SB_RSABG-Rancho Santa Ana Botanic Garden SB_USDA-US Dept of Agriculture	600 1,500	8 S:8	1	2	1	0	0	4	4	4	8	0	0
Charadrius alexandrinus nivosus western snowy plover	G3T3 S2S3	Threatened None	CDFW_SSC-Species of Special Concern NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	0 20	125 S:3	0	1	0	0	0	2	2	1	3	0	0
Chloropyron maritimum ssp. palustre Point Reyes salty bird's-beak	G4?T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	0 10	68 S:22	4	5	3	1	1	8	9	13	21	1	0
Chloropyron molle ssp. molle soft salty bird's-beak	G2T1 S1	Endangered Rare	Rare Plant Rank - 1B.2	5 5	27 S:2	0	0	0	0	2	0	2	0	0	2	0
Chorizanthe cuspidata var. cuspidata San Francisco Bay spineflower	G2T1 S1	None None	Rare Plant Rank - 1B.2	1,800 1,800	17 S:1	0	0	0	0	0	1	1	0	1	0	0
Chorizanthe valida Sonoma spineflower	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden	30 30	6 S:1	0	0	0	0	1	0	1	0	0	1	0
Cicindela hirticollis gravida sandy beach tiger beetle	G5T2 S2	None None		10 10	34 S:1	0	0	0	0	1	0	1	0	0	0	1
Cicuta maculata var. bolanderi Bolander's water-hemlock	G5T4 S2	None None	Rare Plant Rank - 2B.1	40 40	17 S:2	0	0	0	0	0	2	1	1	2	0	0
Cirsium andrewsii Franciscan thistle	G3 S3	None None	Rare Plant Rank - 1B.2	5 300	31 S:3	0	0	0	0	0	3	2	1	3	0	0
Cirsium hydrophilum var. vaseyi Mt. Tamalpais thistle	G2T1 S1	None None	Rare Plant Rank - 1B.2	600 2,000	14 S:13	2	6	0	0	0	5	7	6	13	0	0
Coastal Brackish Marsh Coastal Brackish Marsh	G2 S2.1	None None		15 15	30 S:2	0	0	1	0	0	1	2	0	2	0	0
Coastal Terrace Prairie Coastal Terrace Prairie	G2 S2.1	None None		400 400	8 S:1	0	0	0	0	0	1	1	0	1	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Collinsia corymbosa round-headed Chinese-houses	G1 S1	None None	Rare Plant Rank - 1B.2		13 S:1	0	0	0	0	0	1	1	0	1	0	0
Corynorhinus townsendii Townsend's big-eared bat	G3G4 S2	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	10 470	625 S:11	1	2	0	0	1	7	6	5	10	1	0
Cypseloides niger black swift	G4 S2	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern NABCI_YWL-Yellow Watch List USFWS_BCC-Birds of Conservation Concern	600 600	46 S:1	0	0	0	0	0	1	1	0	1	0	0
Danaus plexippus pop. 1 monarch - California overwintering population	G4T2T3 S2S3	None None	USFS_S-Sensitive	20 250	378 S:12	0	7	3	0	2	0	5	7	10	1	1
Delphinium bakeri Baker's larkspur	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_UCBBG-UC Berkeley Botanical Garden	350 400	6 S:4	0	0	0	1	0	3	0	4	4	0	0
Delphinium luteum golden larkspur	G1 S1	Endangered Rare	Rare Plant Rank - 1B.1 SB_UCBBG-UC Berkeley Botanical Garden	150 150	11 S:1	0	0	0	0	0	1	1	0	1	0	0
Dicamptodon ensatus California giant salamander	G3 S2S3	None None	CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	50 1,300	229 S:26	5	4	0	1	0	16	14	12	26	0	0
Dirca occidentalis western leatherwood	G2 S2	None None	Rare Plant Rank - 1B.2 SB_RSABG-Rancho Santa Ana Botanic Garden	140 600	65 S:5	0	1	0	0	0	4	3	2	5	0	0
Egretta thula snowy egret	G5 S4	None None	IUCN_LC-Least Concern	18 18	17 S:1	0	1	0	0	0	0	0	1	1	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Elanus leucurus white-tailed kite	G5 S3S4	None None	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern	75 75	164 S:1	0	0	0	0	0	1	1	0	1	0	0
Emys marmorata western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	12 784	1236 S:20	1	10	5	0	0	4	1	19	20	0	0
Entosthodon kochii Koch's cord moss	G1 S1	None None	Rare Plant Rank - 1B.3		4 S:1	0	0	0	0	0	1	1	0	1	0	0
Eriogonum luteolum var. caninum Tiburon buckwheat	G5T2 S2	None None	Rare Plant Rank - 1B.2	312 2,100	26 S:18	2	0	0	0	0	16	10	8	18	0	0
Erysimum concinnum bluff wallflower	G3 S2	None None	Rare Plant Rank - 1B.2		30 S:1	0	0	0	0	0	1	1	0	1	0	0
Eucyclogobius newberryi tidewater goby	G3 S3	Endangered None	AFS_EN-Endangered CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable	10 35	117 S:3	0	0	0	0	3	0	3	0	0	0	3
Fissidens pauperculus minute pocket moss	G3? S2	None None	Rare Plant Rank - 1B.2 USFS_S-Sensitive	1,000 1,000	22 S:2	0	0	0	0	0	2	2	0	2	0	0
Fritillaria lanceolata var. tristulis Marin checker lily	G5T2 S2	None None	Rare Plant Rank - 1B.1	40 1,000	32 S:13	0	0	5	0	0	8	7	6	13	0	0
Fritillaria liliacea fragrant fritillary	G2 S2	None None	Rare Plant Rank - 1B.2 USFS_S-Sensitive	40 900	81 S:13	0	5	4	0	0	4	3	10	13	0	0
Geothlypis trichas sinuosa saltmarsh common yellowthroat	G5T3 S3	None None	CDFW_SSC-Species of Special Concern USFWS_BCC-Birds of Conservation Concern	0 170	112 S:11	2	2	0	0	0	7	7	4	11	0	0
Gilia capitata ssp. chamissonis blue coast gilia	G5T2 S2	None None	Rare Plant Rank - 1B.1	20 40	37 S:2	0	0	1	0	0	1	1	1	2	0	0
Gilia capitata ssp. tomentosa woolly-headed gilia	G5T1 S1	None None	Rare Plant Rank - 1B.1	300 400	11 S:2	0	0	0	0	0	2	2	0	2	0	0
Gilia millefoliata dark-eyed gilia	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive		54 S:1	0	0	0	0	0	1	1	0	1	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Helianthella castanea Diablo helianthella	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive		107 S:1	0	0	0	0	0	1	1	0	1	0	0
Hemizonia congesta ssp. congesta congested-headed hayfield tarplant	G5T1T2 S1S2	None None	Rare Plant Rank - 1B.2	60 492	33 S:8	0	1	2	0	0	5	6	2	8	0	0
Hesperolinon congestum Marin western flax	G1 S1	Threatened Threatened	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden	200 1,200	26 S:9	1	4	1	0	0	3	1	8	9	0	0
Heteranthera dubia water star-grass	G5 S2	None None	Rare Plant Rank - 2B.2	80 80	9 S:1	0	0	0	0	0	1	1	0	1	0	0
Holocarpha macradenia Santa Cruz tarplant	G1 S1	Threatened Endangered	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden	120 120	37 S:2	0	0	0	0	1	1	2	0	1	1	0
Horkelia marinensis Point Reyes horkelia	G2 S2	None None	Rare Plant Rank - 1B.2		36 S:1	0	0	0	0	0	1	1	0	1	0	0
Horkelia tenuiloba thin-lobed horkelia	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden	1,100 2,100	27 S:5	1	2	0	0	0	2	3	2	5	0	0
Hydrochara ricksecker Ricksecker's water scavenger beetle	G2? S2?	None None		160 160	13 S:1	0	0	0	0	0	1	1	0	1	0	0
Ischnura gemina San Francisco forktail damselfly	G2 S2	None None	IUCN_VU-Vulnerable	25 25	7 S:1	0	0	0	0	0	1	1	0	1	0	0
Kopsiopsis hookeri small groundcone	G4? S1S2	None None	Rare Plant Rank - 2B.3	400 1,785	21 S:4	0	0	1	0	0	3	3	1	4	0	0
Lasionycteris noctivagans silver-haired bat	G5 S3S4	None None	IUCN_LC-Least Concern WBWG_M-Medium Priority	580 580	138 S:2	0	0	0	0	0	2	2	0	2	0	0
Lasiurus blossevillii western red bat	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_H-High Priority	43 43	122 S:1	0	1	0	0	0	0	0	1	1	0	0

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Lasiurus cinereus hoary bat	G5 S4	None None	IUCN_LC-Least Concern WBWG_M-Medium Priority	40 1,215	235 S:7	0	0	0	0	0	7	7	0	7	0	0
Lasthenia californica ssp. macrantha perennial goldfields	G3T2 S2	None None	Rare Plant Rank - 1B.2	80 80	59 S:1	0	0	0	0	0	1	1	0	1	0	0
Lasthenia conjugens Contra Costa goldfields	G1 S1	Endangered None	Rare Plant Rank - 1B.1 SB_UCBBG-UC Berkeley Botanical Garden	280 280	33 S:1	0	1	0	0	0	0	0	1	1	0	0
Laterallus jamaicensis coturniculus California black rail	G3G4T1 S1	None Threatened	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_NT-Near Threatened NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	0 30	241 S:20	4	5	0	2	0	9	8	12	20	0	0
Lavinia symmetricus ssp. 2 Tomales roach	G4T2T3 S2	None None	CDFW_SSC-Species of Special Concern	10 190	4 S:4	2	1	1	0	0	0	0	4	4	0	0
Lessingia micradenia var. micradenia Tamalpais lessingia	G2T2 S2	None None	Rare Plant Rank - 1B.2 SB_RSABG-Rancho Santa Ana Botanic Garden SB_USDA-US Dept of Agriculture	200 1,000	9 S:9	0	1	0	0	0	8	4	5	9	0	0
Lichnanthe ursina bumblebee scarab beetle	G2 S2	None None			8 S:1	0	0	0	0	0	1	1	0	1	0	0
Lilaeopsis masonii Mason's lilaeopsis	G2 S2	None Rare	Rare Plant Rank - 1B.1	5 5	197 S:1	0	0	0	0	1	0	1	0	0	0	1
Lilium maritimum coast lily	G2 S2	None None	Rare Plant Rank - 1B.1	20 20	76 S:1	0	0	0	0	0	1	1	0	1	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Lilium pardalinum ssp. pitkinense Pitkin Marsh lily	G5T1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_BerrySB-Berry Seed Bank SB_RSABG-Rancho Santa Ana Botanic Garden SB_USDA-US Dept of Agriculture		4 S:1	0	0	0	0	1	0	1	0	0	1	0
Melospiza melodia samuelis San Pablo song sparrow	G5T2 S2	None None	CDFW_SSC-Species of Special Concern USFWS_BCC-Birds of Conservation Concern	0 20	41 S:15	2	4	0	0	0	9	9	6	15	0	0
Microseris paludosa marsh microseris	G2 S2	None None	Rare Plant Rank - 1B.2	500 500	39 S:4	0	0	0	0	0	4	4	0	4	0	0
Mielichhoferia elongata elongate copper moss	G5 S4	None None	Rare Plant Rank - 4.3 USFS_S-Sensitive	100 100	20 S:1	0	0	0	0	0	1	0	1	1	0	0
Navarretia leucocephala ssp. bakeri Baker's navarretia	G4T2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive	200 200	58 S:1	0	1	0	0	0	0	0	1	1	0	0
Navarretia rosulata Marin County navarretia	G2 S2	None None	Rare Plant Rank - 1B.2	900 1,980	13 S:10	0	2	0	0	0	8	10	0	10	0	0
Northern Coastal Salt Marsh Northern Coastal Salt Marsh	G3 S3.2	None None		10 15	53 S:7	0	1	1	0	0	5	7	0	7	0	0
Northern Maritime Chaparral Northern Maritime Chaparral	G1 S1.2	None None		300 300	17 S:1	0	1	0	0	0	0	1	0	1	0	0
Northern Vernal Pool Northern Vernal Pool	G2 S2.1	None None		240 240	20 S:1	0	0	0	0	0	1	1	0	1	0	0
Oncorhynchus kisutch coho salmon - central California coast ESU	G4 S2?	Endangered Endangered	AFS_EN-Endangered	130 180	22 S:2	0	1	0	0	0	1	0	2	2	0	0
Oncorhynchus mykiss irideus steelhead - central California coast DPS	G5T2T3Q S2S3	Threatened None	AFS_TH-Threatened	40 400	39 S:3	1	0	1	1	0	0	0	3	3	0	0
Pandion haliaetus osprey	G5 S4	None None	CDF_S-Sensitive CDFW_WL-Watch List IUCN_LC-Least Concern	400 400	496 S:1	0	0	0	0	0	1	1	0	1	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Pentachaeta bellidiflora white-rayed pentachaeta	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_UCBBG-UC Berkeley Botanical Garden	120 400	14 S:6	0	0	0	0	5	1	6	0	1	0	5
Phacelia insularis var. continentis North Coast phacelia	G2T2 S2	None None	Rare Plant Rank - 1B.2		15 S:1	0	0	0	0	0	1	1	0	1	0	0
Plagiobothrys glaber hairless popcornflower	GH SH	None None	Rare Plant Rank - 1A		9 S:1	0	0	0	0	1	0	1	0	0	1	0
Plagiobothrys mollis var. vestitus Petaluma popcornflower	G4?TX SX	None None	Rare Plant Rank - 1A	20 20	1 S:1	0	0	0	0	1	0	1	0	0	1	0
Pleuropogon hooverianus North Coast semaphore grass	G2 S2	None Threatened	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_BerrySB-Berry Seed Bank SB_RSABG-Rancho Santa Ana Botanic Garden	350 500	26 S:5	1	0	0	1	2	1	3	2	3	2	0
Pogonichthys macrolepidotus Sacramento splittail	GNR S3	None None	AFS_VU-Vulnerable CDFW_SSC-Species of Special Concern IUCN_EN-Endangered	1 1	15 S:1	0	0	0	0	0	1	0	1	1	0	0
Polygonum marinense Marin knotweed	G2Q S2	None None	Rare Plant Rank - 3.1	5 5	32 S:5	0	0	2	0	0	3	4	1	5	0	0
Pomatiopsis binneyi robust walker	G1 S1	None None		150 2,040	2 S:2	0	0	0	0	0	2	2	0	2	0	0
Quercus parvula var. tamalpaisensis Tamalpais oak	G4T2 S2	None None	Rare Plant Rank - 1B.3	500 2,000	9 S:9	0	1	0	1	0	7	8	1	9	0	0
Rallus longirostris obsoletus California clapper rail	G5T1 S1	Endangered Endangered	CDFW_FP-Fully Protected NABCI_RWL-Red Watch List	2 18	98 S:15	2	5	0	0	1	7	5	10	14	1	0
Rana boylii foothill yellow-legged frog	G3 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened USFS_S-Sensitive	30 1,600	888 S:10	1	1	2	0	0	6	4	6	10	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Rana draytonii California red-legged frog	G2G3 S2S3	Threatened None	CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable	10 1,060	1408 S:60	4	10	3	0	0	43	6	54	60	0	0
Reithrodontomys raviventris salt-marsh harvest mouse	G1G2 S1S2	Endangered Endangered	CDFW_FP-Fully Protected IUCN_EN-Endangered	1 8	144 S:7	0	0	0	2	1	4	6	1	6	1	0
Riparia riparia bank swallow	G5 S2	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern	25 25	297 S:1	0	0	0	0	0	1	1	0	1	0	0
Serpentine Bunchgrass Serpentine Bunchgrass	G2 S2.2	None None		1,000 1,000	22 S:1	0	0	0	0	0	1	1	0	1	0	0
Setophaga petechia yellow warbler	G5 S3S4	None None	CDFW_SSC-Species of Special Concern USFWS_BCC-Birds of Conservation Concern	20 20	69 S:1	0	0	0	0	0	1	1	0	1	0	0
Sidalcea calycosa ssp. rhizomata Point Reyes checkerbloom	G5T2 S2	None None	Rare Plant Rank - 1B.2	30 300	34 S:3	0	0	0	0	0	3	3	0	3	0	0
Sidalcea hickmanii ssp. viridis Marin checkerbloom	G3TH SH	None None	Rare Plant Rank - 1B.1	500 1,390	4 S:2	0	0	0	0	0	2	2	0	2	0	0
Spirinchus thaleichthys longfin smelt	G5 S1	Candidate Threatened	CDFW_SSC-Species of Special Concern	0 0	45 S:3	0	0	0	0	0	3	1	2	3	0	0
Stebbinsoseris decipiens Santa Cruz microseris	G2 S2	None None	Rare Plant Rank - 1B.2	460 2,450	19 S:3	0	0	0	0	1	2	1	2	2	1	0
Streptanthus batrachopus Tamalpais jewelflower	G2 S2	None None	Rare Plant Rank - 1B.3	1,100 2,200	8 S:8	1	2	2	0	0	3	4	4	8	0	0
Streptanthus glandulosus ssp. pulchellus Mt. Tamalpais bristly jewelflower	G4T2 S2	None None	Rare Plant Rank - 1B.2 SB_RSABG-Rancho Santa Ana Botanic Garden	420 2,200	24 S:24	4	5	0	0	0	15	13	11	24	0	0
Syncaris pacifica California freshwater shrimp	G2 S2	Endangered Endangered	IUCN_EN-Endangered	30 120	18 S:2	0	0	2	0	0	0	0	2	2	0	0
Talanites ubicki Ubick's gnaphosid spider	G1 S1	None None		150 150	1 S:1	0	0	0	0	0	1	1	0	1	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Taricha rivularis red-bellied newt	G4 S2	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	20 20	136 S:1	0	0	0	0	0	1	1	0	1	0	0
Taxidea taxus American badger	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	40 200	535 S:5	0	0	1	0	0	4	4	1	5	0	0
Trachusa gummifera San Francisco Bay Area leaf-cutter bee	G1 S1	None None		1,130 1,130	2 S:1	0	0	0	0	0	1	1	0	1	0	0
Trifolium amoenum two-fork clover	G1 S1	Endangered None	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden SB_USDA-US Dept of Agriculture	300 300	26 S:4	0	0	0	0	2	2	4	0	2	2	0
Triphysaria floribunda San Francisco owl's-clover	G2? S2?	None None	Rare Plant Rank - 1B.2		50 S:1	0	0	0	0	0	1	1	0	1	0	0
Triquetrella californica coastal triquetrella	G2 S2	None None	Rare Plant Rank - 1B.2 USFS_S-Sensitive		13 S:1	0	0	0	0	0	1	1	0	1	0	0
Tryonia imitator mimic tryonia (=California brackishwater snail)	G2 S2	None None	IUCN_DD-Data Deficient	0 6	39 S:2	0	0	0	0	1	1	2	0	1	0	1
Vespericola marinensis Marin hesperian	G2 S2	None None		25 600	23 S:14	0	0	0	0	0	14	14	0	14	0	0

Appendix E
California Red-legged Frog Relocation Plan

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California Red-legged Frog Relocation Plan

Following avoidance measures and implementing approaches to minimize impact to California Red-legged Frogs that may be found at the project site, relocating individual frogs found within the project area would be necessary.

The name(s) and credentials of the qualified biologist(s) to act as construction monitors shall be submitted to the USFWS for approval at least 15 days before construction work begins. These construction monitors will be at the site during work periods to observe the site and survey for California red-legged frogs.

If California red-legged frogs are found at the project site during work activities, project personnel, including the qualified biologist(s) approved by USFWS shall notify USFWS and NPS of the species found.

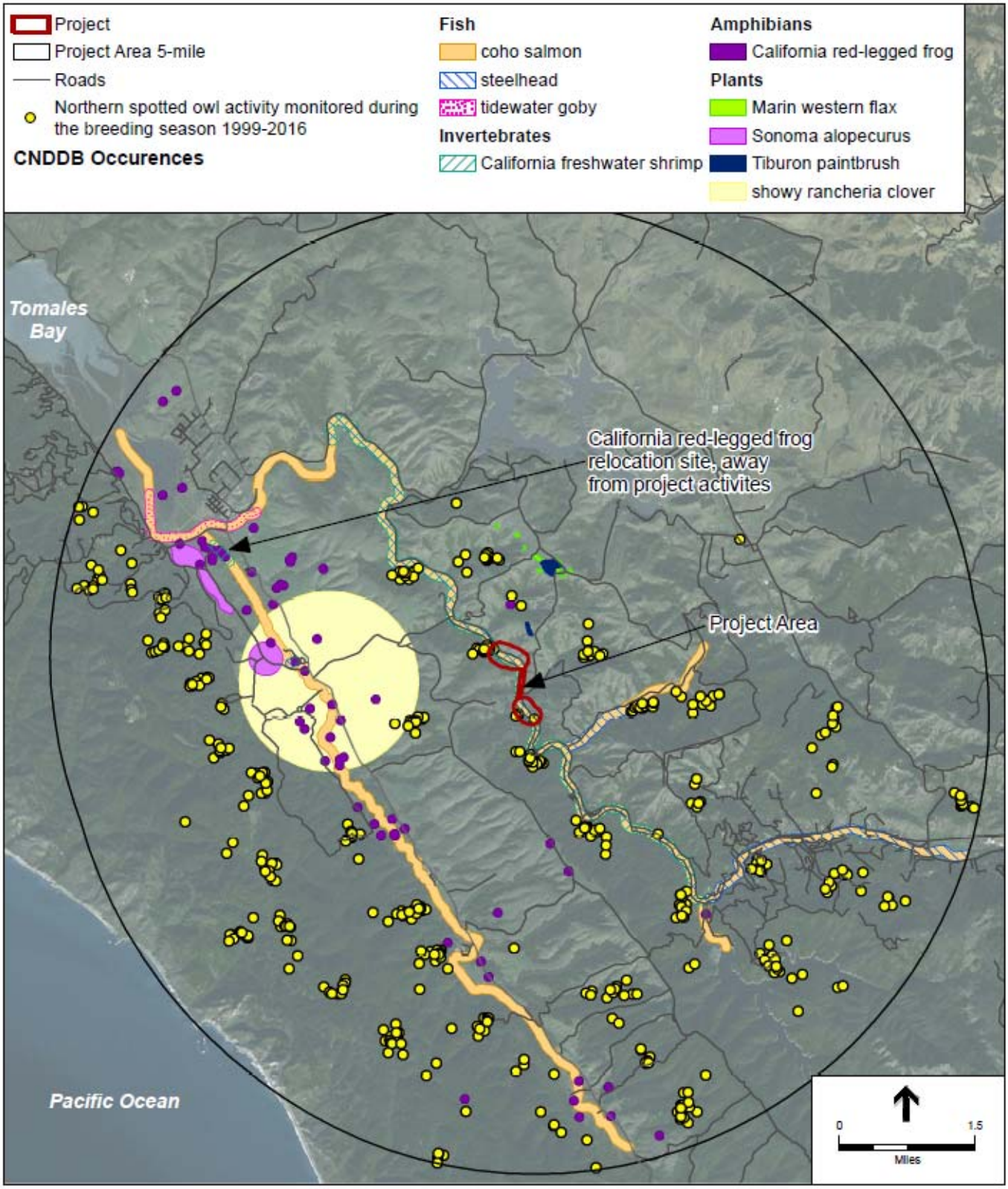
The location proposed for relocation of California red-legged frogs that are found within the project area is approximately 0.25 miles west within the floodplain forests and streamside banks of Lagunitas Creek, downstream of the project site on National Park Service land. This location, according to the CNDDB, maintains California red-legged frog habitat with large floodplain forests and low wet territories adjacent to Lagunitas Creek. A map of this location is provided as an attachment to this plan.

If individual frogs are found in the project area and need to be relocated, qualified biologists will handle frogs carefully with latex or nitrile cloves, and placed in clean cooler with a damp towel on the bottom. No more than 3 individual frogs will be placed in one cooler.

The frogs will be driven immediately after capture to the release site on Lagunitas Creek, approximately 1 minute away by car. The frogs will be released adjacent to a creek or wetland environment at least 25 yards away from a road or trail where they can quickly access water. The frogs will be released by turning the bucket down slowly against the ground to allow them

to crawl out on their own and away from the bucket. Frogs will be monitored for no less than 5 minutes, or until they move out of site, to confirm that each frog relocated recovered from the transport. If any frogs are observed to have been hurt, killed, or injured in the process of relocation, the qualified biologist will immediately report the incident of harm, injury, or mortality of a California red-legged frog to USFWS and NPS. Photos of the frogs will be collected during the relocation efforts to help document the process.

All data collected on California red-legged frogs gathered from the relocation process will be reported to the USFWS and NPS by qualified biologist(s) no later than 10 days following the relocation of California red-legged frogs.



SOURCE: aerial (ESRI), creeks (NHD), action area (ESA 2017), CNDDB (CDFW 2017)

Lagunitas Creek Floodplain and Riparian Enhancement Project . 150145

Figure 1

CNDDB Occurrences of Federally-Listed Species within 5 miles of the Action Area