Final Initial Study/Mitigated Negative Declaration

University of California Santa Cruz

Recycling Yard and

Great Meadow Bike Path Projects

(Tiered from 2005 LRDP EIR)

Prepared By:

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April 2015

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1 PROJECT INFORMATION

Project title:

Recycling Yard Project/Great Meadow Bike Path Project

Project location:

Meadow area north of UCSC Farm, University of California, Santa Cruz main campus, Santa Cruz, CA

Lead agency's name and address:

The Regents of the University of California
1111 Franklin Street
Oakland, CA 94607

Contact person:

Alisa Klaus, Senior Environmental Planner (831) 459-3732

Project sponsor's name and address:

Office of Physical Planning & Construction
University of California Santa Cruz
1156 High Street, Barn G
Santa Cruz, CA 95064

Location of administrative record:

See Project sponsor, above.

Identification of previous documents relied upon for tiering purposes:

UCSC 2005 Long Range Development Plan Environmental Impact Report. Available on line at: http://lrdp.ucsc.edu/final-eir.shtml

2 INTRODUCTION

2.1 INITIAL STUDY

Pursuant to Section 15063 of the California Environmental Quality Act (CEQA) Guidelines (Title 14, California Code of Regulations, Sections 15000 et seq.), an Initial Study is a preliminary environmental analysis that is used by the lead agency as a basis for determining whether an EIR, a Mitigated Negative Declaration, or a Negative Declaration is required for a project. The CEQA Guidelines require that an Initial Study contain a project description; a description of environmental setting; an identification of environmental effects by checklist or other similar form; an explanation of environmental effects; a discussion of mitigation for significant environmental effects; an evaluation of the project's consistency with existing, applicable land use controls; and the names of persons who prepared the study.

The purpose of this Initial Study is to evaluate the potential environmental impacts of the proposed project to determine what level of additional environmental review, if any, is appropriate. As shown in the Determination form in Section 5 of this document and based on the analysis contained in this Initial Study, which is tiered from the UCSC 2005 Long Range Development Plan Environmental Impact Report, it has been determined that the proposed projects would not result in any potentially significant impacts that either were not previously identified and analyzed in the 2005 LRDP EIR, or that cannot be mitigated to less-than-significant levels through mitigation included in the project.

The analysis contained in this Initial Study concludes that the proposed projects would result in the following categories of impacts, depending on the environmental issue involved: no impact; less-than-significant impact; or a less-than-significant impact with the implementation of mitigation measures. Therefore, preparation of a Mitigated Negative Declaration is appropriate. The proposed Mitigated Negative Declaration is presented in Appendix A.

2.2 TIERING PROCESS

The CEQA concept of "tiering" refers to the evaluation of general environmental matters in a broad program-level EIR, with subsequent focused environmental documents for individual projects that implement the program. This environmental document incorporates by reference the discussions in the CLRDP EIR (the Program EIR) and concentrates on project-specific issues. CEQA and the CEQA Guidelines encourage the use of tiered environmental documents to reduce delays and excessive paperwork in the environmental review process. This is accomplished in tiered documents by eliminating repetitive analyses of issues that were adequately addressed in the Program EIR and by incorporating those analyses by reference.

Section 15168(d) of the State CEQA Guidelines provides for simplifying the preparation of environmental documents on individual parts of the program by incorporating by reference analyses and discussions that apply to the program as a whole. Where an EIR has been prepared or certified for a program or plan, the environmental review for a later activity consistent with the program or plan should be limited to effects that were not analyzed as significant in the prior EIR or that are susceptible to substantial reduction or avoidance (CEQA Guidelines Section 15152[d]).

This Initial Study is tiered from the UC Santa Cruz 2005 LRDP EIR (UC Santa Cruz 2006b) in accordance with Sections 15152 and 15168 of the CEQA Guidelines and Public Resources Code Section 21094. The 2005 LRDP EIR is a Program EIR that was prepared pursuant to Section 15168 of the CEQA Guidelines. The LRDP is a general land use plan that guides physical development on the campus to accommodate expanded and new program initiatives. The LRDP EIR analyzes full implementation of uses and physical development proposed under the LRDP, and it identifies measures to mitigate the significant adverse program-level and cumulative impacts associated with the anticipated development.

By tiering from the LRDP EIR, this Tiered Initial Study will rely on the LRDP EIR for the following:

a discussion of general background and setting information for environmental topic areas; overall growth-related issues; issues that were evaluated in sufficient detail in the LRDP EIR for which there is no significant new information or change in circumstances that would require further analysis; and assessment of cumulative impacts.

This Initial Study will evaluate the potential environmental impacts of the proposed projects with respect to the LRDP EIR to determine what level of additional environmental review, if any, is appropriate. As shown in the Determination in Section 5 of this document, and based on the analysis contained in this Initial Study, it has been determined that the proposed project would not have potentially significant effects on the environment that cannot be reduced through project-level mitigation to a less than significant level, or that were not previously addressed or adequately addressed in the LRDP EIR. Therefore, a Mitigated Negative Declaration will be prepared.

The LRDP EIR identifies measures to mitigate the potential environmental effects of proposed development. The project analyzed in this Initial Study incorporates applicable LRDP EIR mitigation measures.

2.3 PUBLIC AND AGENCY REVIEW

This Draft Initial Study were circulated for public and agency review from March 10, 2015 to April 9, 2015. Copies of this document were available for review at the following locations:

UCSC Physical Planning and Construction, Barn G, UC Santa Cruz

McHenry Library and the Science and Engineering Library on the UC Santa Cruz campus

Central Branch of the Santa Cruz Public Library in downtown Santa Cruz

The UC Santa Cruz web site, at http://ppc.ucsc.edu

Two comment letters from public agencies and five comment letters from individuals were received during the public review period. These comment letters and the University’s responses are included in Appendix F. Minor revisions to the text of the Draft Initial Study have been made in response to these comment letters.

2.4 PROJECT APPROVALS

As a public agency principally responsible for approving or carrying out the proposed project, the University of California is the Lead Agency under CEQA and is responsible for certifying the adequacy of the environmental document and approving the proposed project. The Final IS/MND and approval of design of the Recycling Yard and Bike Path projects will be considered by University decision makers and adopted if it is determined to be in compliance with CEQA. Upon adoption of the IS/MND, the University will consider approval of design for each of the two projects. The Campus anticipates that the Bike Path Project will be considered for approval in April 2015 and the Recycling Yard Project and associated LRDP Amendment will be considered for approval in May 2015.

A permit from CalRecycle may be required to operate the new composting system, depending on the volume of materials to be processed. The State Water Resources Control Board's proposed General Waste Discharge Requirements for Composting Operations, currently in draft form, may also be applicable to the new composting system, and the facility may require coverage under the statewide Industrial Activities Storm Water General Permit. Prior to the beginning of construction, the Campus would submit a Notice of Intent to the Central Coast Storm Water Regional Control Board (SWRCB) and obtain coverage under the General Permit for Discharge of Storm Water Associated with Construction Activity.

2.5 ORGANIZATION OF THE INITIAL STUDY

This Initial Study is organized into the following sections:

Section 1 - Project Information: provides summary background information about the proposed projects, including project location, lead agency, and contact information.

Section 2 - Introduction: summarizes the scope of the document, the project's review and approval processes, and the document's organization.

Section 3 - Project Description: presents a description of the proposed project, including the need for the projects the projects' objectives, and the elements included in the projects.

Section 4 - Environmental Factors Potentially Affected: addresses whether this Initial Study identifies any environmental factors that involve a significant or potentially significant impact that cannot be reduced to a less-than-significant level.

Section 5 - Determination: indicates whether impacts associated with the proposed project are significant and what, if any, additional environmental documentation is required.

Section 6 - Evaluation of Environmental Impacts: contains the Environmental Checklist form for each resource area. The checklist is used to assist in evaluating the potential environmental impacts of the proposed projects. This section also presents a background summary for each resource area, the standards of significance, and an explanation of all checklist answers.

Section 7 - Fish and Game Determination: indicates whether the projects have a potential to impact wildlife or habitat and therefore will require payment of a Fish and Game filing fee.

Section 8 – References

Section 9 - Agencies and Persons Consulted

Section 10 - Report Preparers

Appendix A – Proposed Mitigated Negative Declaration

Appendix B – 2005 LRDP Mitigation Measures Incorporated in the Project

Appendix C – Proposed Mitigation Monitoring and Reporting Program

Appendix D – Air Quality and Greenhouse Gas Emission Calculations

Appendix E – Biological Resources Reports

Appendix F – Responses to Comments on the Draft Initial Study/Mitigated Negative Declaration

3 PROJECT DESCRIPTION

3.1 PROJECT LOCATION

The University of California Santa Cruz (UC Santa Cruz) is located on the coast of Monterey Bay in Santa Cruz County, approximately 70 miles south of San Francisco, 30 miles southeast of San Jose and 30 miles north of Monterey (Figure 3-1). Approximately 53 percent of the main campus, including most of the area that is currently developed, is located within the city limits of Santa Cruz; the remainder is in unincorporated Santa Cruz County. Approximately 250 acres of undeveloped campus land on the western side of the Empire Grade are within the Coastal Zone.

Public open space borders the campus on two sides: Pogonip City Park and Henry Cowell Redwoods State Park on the east and Wilder Ranch State Park on the west. On the south, the campus borders the City's upper west side residential neighborhoods. The rural residential Cave Gulch neighborhood is located adjacent to a portion of the campus's northwestern boundary. To the north, the campus is bounded by private land and small-scale rural development. High Street, Bay Street, Western Drive, and Empire Grade Road are the primary access routes to the main campus.

The proposed Recycling Yard and Bike Path project sites are located just north of the 30-acre UCSC Farm, which is operated by the Center for Agroecology and Sustainable Food Systems (CASFS) in the lower campus. The proposed Recycling Yard site consists of approximately 6.1 acres of grassland and coyote brush scrub, bordered on the south by a row of cypress trees which separates it from the Farm. The site is part of a large closed depression, which is a feature of the karst topography which characterizes much of the lower and central campus. The site generally slopes toward the north, where a unpaved fire/service road runs east-west through the low point of the depression. In the north-central portion of the site, outcrops of marble form an east-west-trending ridge. A 50-sf- stone foundation, the only remains of a barn associated with pre-University ranching activities, is located on the ridge. Vehicle access to the site is available from Hagar Drive, a major Campus roadway to the east of the site, via Village Road, which terminates northeast of the site at the Great Meadow Bike Path and continues on west of the bike path as an unpaved fire/service road. Existing conditions at the Project site are shown on Figure 3-2.

The Great Meadow Bike Path on the UCSC campus, which was built in 1974, is a recreational and primary bicycle access route to central developed Campus facilities and to undeveloped recreational areas of the campus. provides access to numerous areas used for recreational purposes, such as recreational trails in the North campus, as well as providing access to other areas. The Class 1 facility is approximately one mile long, with a grade of 5 to 7 percent. Downhill cyclists may choose to reach speeds up to 40 mph in the downhill direction. Approximately 1,000 cyclists per day, both commuters and recreational riders, use this bike path each day. Above the Village Road, the bike path is split into unidirectional paths, uphill and downhill. At the Village Road crossing, the two directional paths join into one bidirectional path (Figure 3-2).

3.2 PROJECT OVERVIEW

This Initial Study analyzes the environmental effects of two related projects: the Recycling Yard Project and the Great Meadow Bike Path Safety Improvements Project ("Bike Path Project"). The Recycling Yard Project would construct, in two phases, a material recovery facility to accommodate all existing Campus waste recovery services and future composting operations. The Bike Path Project consists of modifications to the intersection of the existing Great Meadow Bike Path and Village Road, which would provide vehicle access to the new recycling yard.

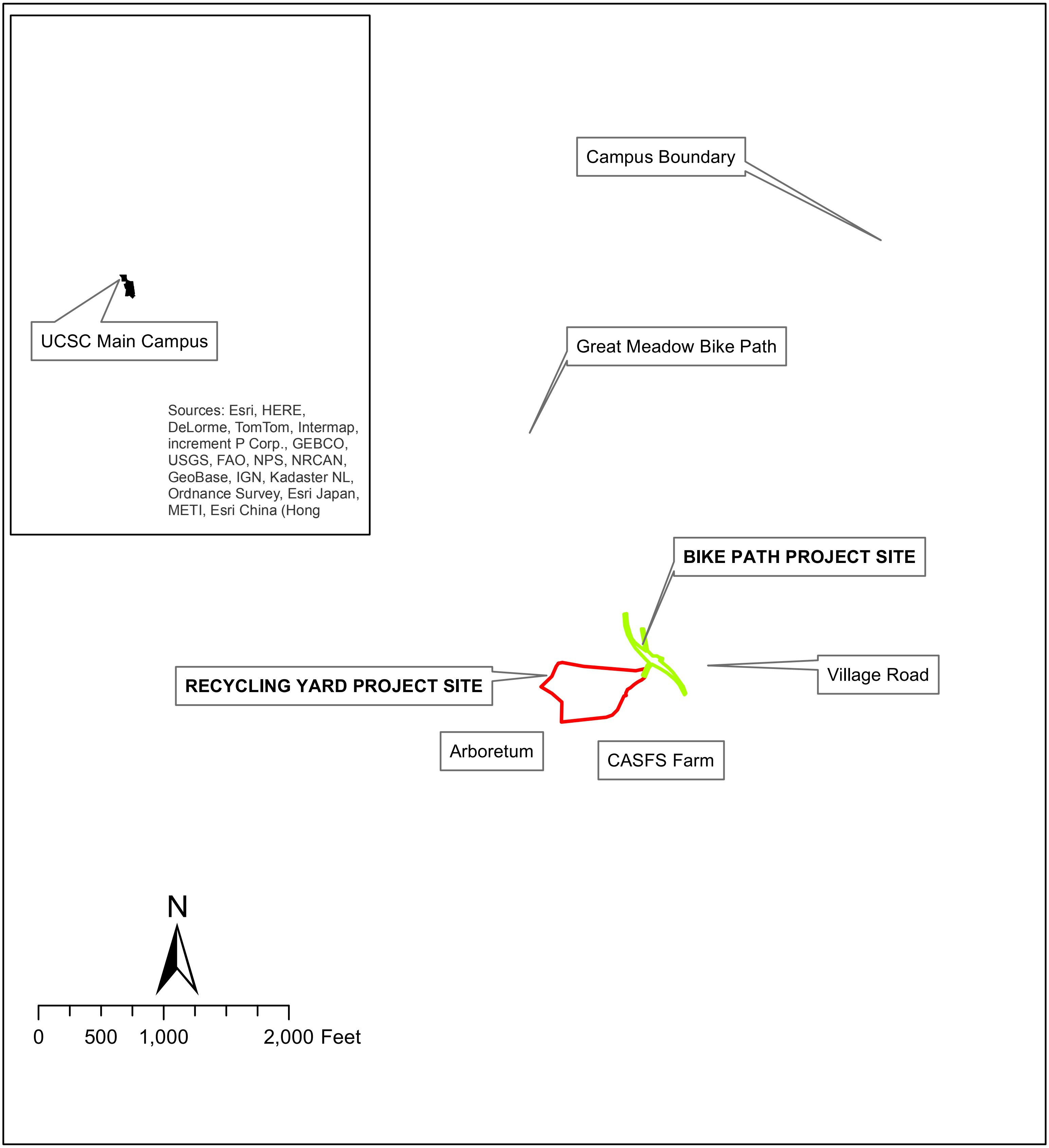

Figure 3-1: Project Location

Recycling Yard and Bike Path Improvement Projects
March 2015

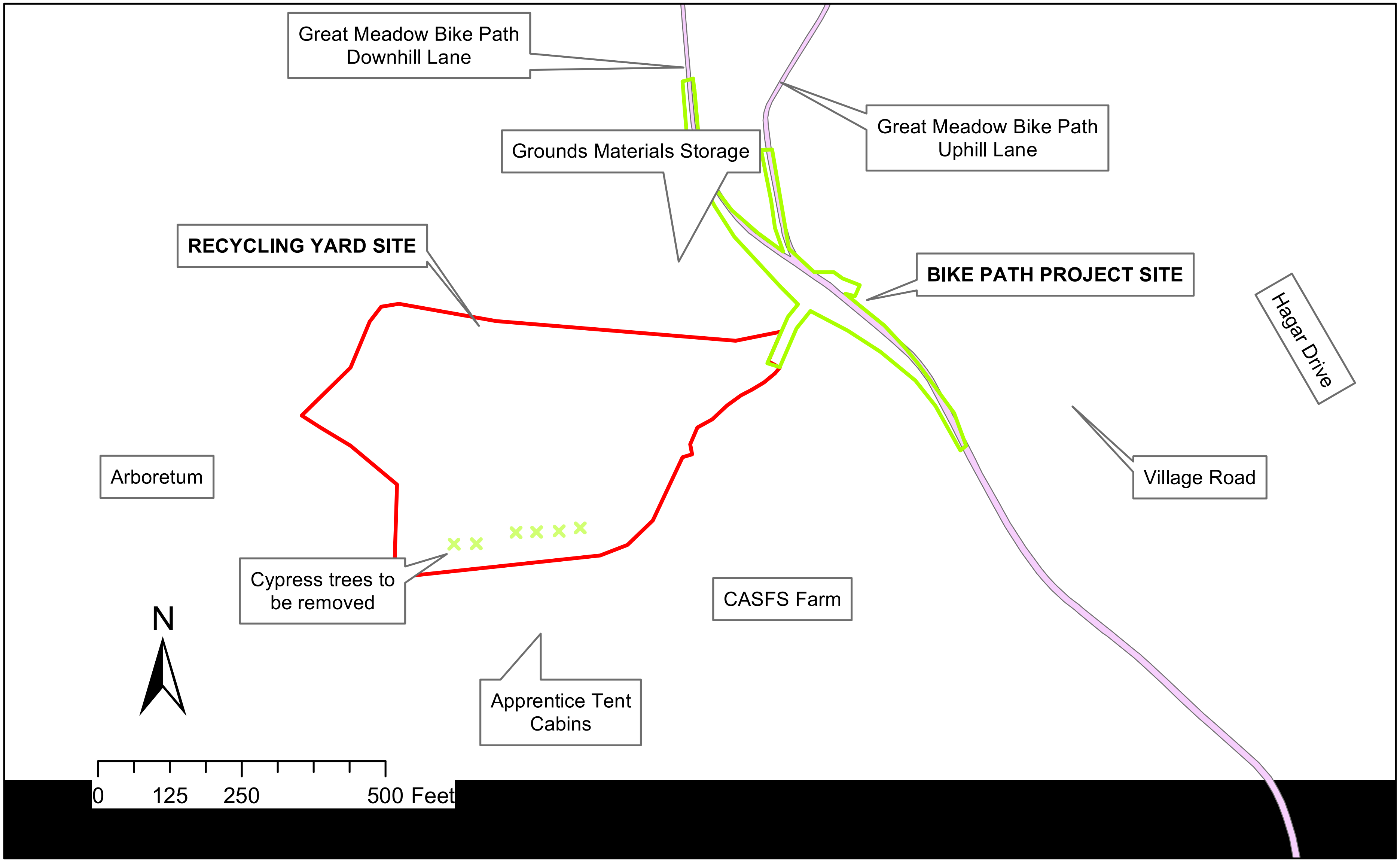

Figure 3-2: Existing Site Conditions

Recycling Yard and Bike Path Improvement Projects
March 2015

3.3 PROJECT BACKGROUND, NEED AND OBJECTIVES

3.3.1 Recycling Yard Project

The University of California Regents created a Sustainable Practices Policy in June of 2004, most recently updated in August 2013 (http://sustainability.ucsc.edu/governance/files/ CSP_2013_2016.pdf). One of the goals of the policy is for each University of California campus to achieve "Zero Waste" by 2020. For the purposes of measuring compliance with UC's zero waste goal, UC locations need to meet or exceed 95 percent diversion of municipal solid waste. Currently, the Campus is sending 1,369 tons per year (TPY) of solid waste to the City of Santa Cruz Resource Recovery Facility (RRF) for disposal.

UC Santa Cruz has engaged in various waste reduction and recycling activities for several years. The Campus self-hauls 90 to 95 percent of its waste, recycling, green waste, and compost. Grounds Services maintains a fleet of four front-loader refuse trucks to service 127 trash dumpsters, 81 cardboard dumpsters, eight greenwaste, and 31 mixed recycling dumpsters across the campus. Campus drivers deliver trash and mixed recyclables to the Santa Cruz Landfill and Resource Recovery Center on Dimeo Lane, a 6.5 mile trip from the campus. Physical Plant Grounds Services collects trash, recycling, green waste, and food scrap compactor product on the main campus, at 2300 Delaware, and the Marine Science Campus. Additionally, Grounds Services works closely with Housing Facilities and Environmental Health and Safety (EH&S) to collect and divert a variety of electronic and hazardous waste materials. Construction contractors working for the campus are contractually required to divert a minimum of 75 percent of materials by weight from the landfill waste stream. Grounds Services maintains a trucking operation, roll-off boxes and yard area to manage this construction waste.

Currently, Campus material recovery facilities are scattered around the campus. Approximately 6,000 sf of the Physical Plant Corporation Yard in the lower campus houses is dedicated to recycling operations, including mixed container sorting, paper sorting, storage and loading into tractor-trailer units, active bin storage, battery sorting and storage, bin maintenance, truck preparation, and recycle truck parking. Bin storage and construction and demolition storage and sorting takes place in an unimproved area adjacent to the proposed Recycling Yard site. This area is also used to store purchased landscape materials, green waste destined to go to the City's greenwaste facility, boulders, logs, stumps, and other wood from trees removed on campus, and wood chips for re-use on campus. Seven to eight dumpsters are located in an unimproved area along the edge of the road near the Music Facility on the central campus. This area is used as a small sorting and transfer area. Approximately a dozen dumpsters and two roll-off boxes are accommodated in an unpaved turnout (approximately ¼-acre) along Steinhart Way in the central Campus. This provides a location for sorting and storage.

In addition to the challenges posed by the lack of suitable space, the Campus' commitment to reaching Zero Waste by the year 2020 is complicated by changing trends in the types of materials anaerobic digester or aerobic compost operations accept at material recovery facilities. While organic material, including "post-consumer" food scraps, paper towels, and compostable ware, currently makes up 48 percent (by weight) of campus solid waste, regional material recovery facilities have changed their policies and will no longer accept any organic material other than the pre-consumer food waste that typically originates from kitchens and other food preparatory operations.

To assist the Campus in planning to meet the zero waste challenge, UC Santa Cruz commissioned a team of consultants to evaluate options for achieving this goal, to assess the feasibility of establishing an on-campus consolidated material recovery facility, to analyze the costs and benefits of an on-campus composting operation, and to evaluate two potential sites for a material recovery facility. The feasibility study recommended that the Campus pursue centralization of all operations in a single facility and provided a detailed analysis of the recommended site north of the CASFS Farm. The proposed Project would carry out that recommendation.

3.3.2 Great Meadow Bike Path Project

Several features of the bike path in the vicinity of the intersection with Village Road, in combination with the configuration of the intersection and the speed attained by downhill cyclists, create safety issues for cyclists at the intersection. As cyclists travel downhill toward the intersection, they encounter a relatively sharp (300-foot radius) curve into a dip in the terrain, followed by the convergence of the downhill and uphill paths just above the intersection. In addition, the angle at which the bike path and Village Road cross is skewed (non-orthogonal), which limits visibility further. As technology has improved and made bicycles lighter and more efficient, they have the ability to reach greater speeds. As the CASFS Farm has grown over the years and has become a destination for school groups and visitors, the number of vehicles, including school buses, which cross the bike path at Village Road, has increased. In addition, the proposed Recycling Yard would add to the number of heavy-duty vehicles crossing the bike path at this intersection. For this reason, the Campus has been planning to complete the proposed safety improvements to the bike path, which would bring a portion of this older bicycle facility up to current Caltrans code prior to completion of the Recycling Yard Project.

3.4 CONSISTENCY WITH THE 2005 LRDP

3.4.1 Recycling Yard Project

The Recycling Yard Project would add 15,000 gsf of new institutional support space. The 2005 LRDP building program analyzed in the 2005 LRDP EIR includes 190,700 gsf of institutional support space. The only other Project approved under the 2005 LRDP to add new institutional support space is the Cogeneration Plant Replacement Project, Phase 1, which was recently completed. That project added 4,266 gsf of institutional support space. The proposed Recycling Yard project would bring the total new institutional support space under the 2005 LRDP to 19,266 gsf, which is within the scope of development projected in UCSC's 2005-2020 LRDP (UCSC 2006a) and analyzed in the 2005 LRDP EIR (UCSC 2006b).

The proposed 6.1-acre site for the Recycling Yard is designated Site Research and Support (SRS) (approximately 3.2 acres) and Protected Landscape (PL) (approximately 2.9 acres). The proposed recycling yard is not consistent with either of these land use designations. A minor LRDP amendment to change the land use designation of 3.7 acres of the site to Campus Support would be required. This would include 1.6 acre of PL lands and 2.1 acres of SRS lands. The remainder of the 6.1 acre site would be used for a new access road and storm water detention areas, which are consistent with the PL and SRS land use designations. The potential environmental effects of the LRDP amendment are analyzed in this Initial Study in Section 6.10, *Land Use and Planning*. Existing and proposed LRDP land use designations for the Project sites are shown in Figures 3-3 and 3-4.

The 2005 LRDP projects that the total campus population, including students, faculty, staff, and affiliates, would increase to about 27,294 persons by 2020-21. If employees at off-campus locations are deducted from this number, the on-campus population in 2020-21 would be about 26,400 persons. The 2013-14 three-quarter-average on-campus headcount enrollment was 16,300[1]. Total UC Santa Cruz staff and faculty headcount, including those working off-campus, was 4,182[2] in Fall 2014, for a total population of 20,482. Phase 1 of the Project would relocate existing operations that currently are scattered around the campus and therefore would not result in an increase in Campus population. The Campus anticipates that, in the short term, the responsibilities of existing staff would be redistributed to staff the new composting facility that would be constructed in Phase 2.

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[1] http://planning.ucsc.edu/irps/enrollmt/3rdwk/fall2014.pdf. Approximately 3,000 of these work on the main campus or at 2300 Delaware, which were the sites covered by the 2005 LRDP.

[2] http://planning.ucsc.edu/irps/StaffProfiles/PersonnelProfilePage2014.pdf

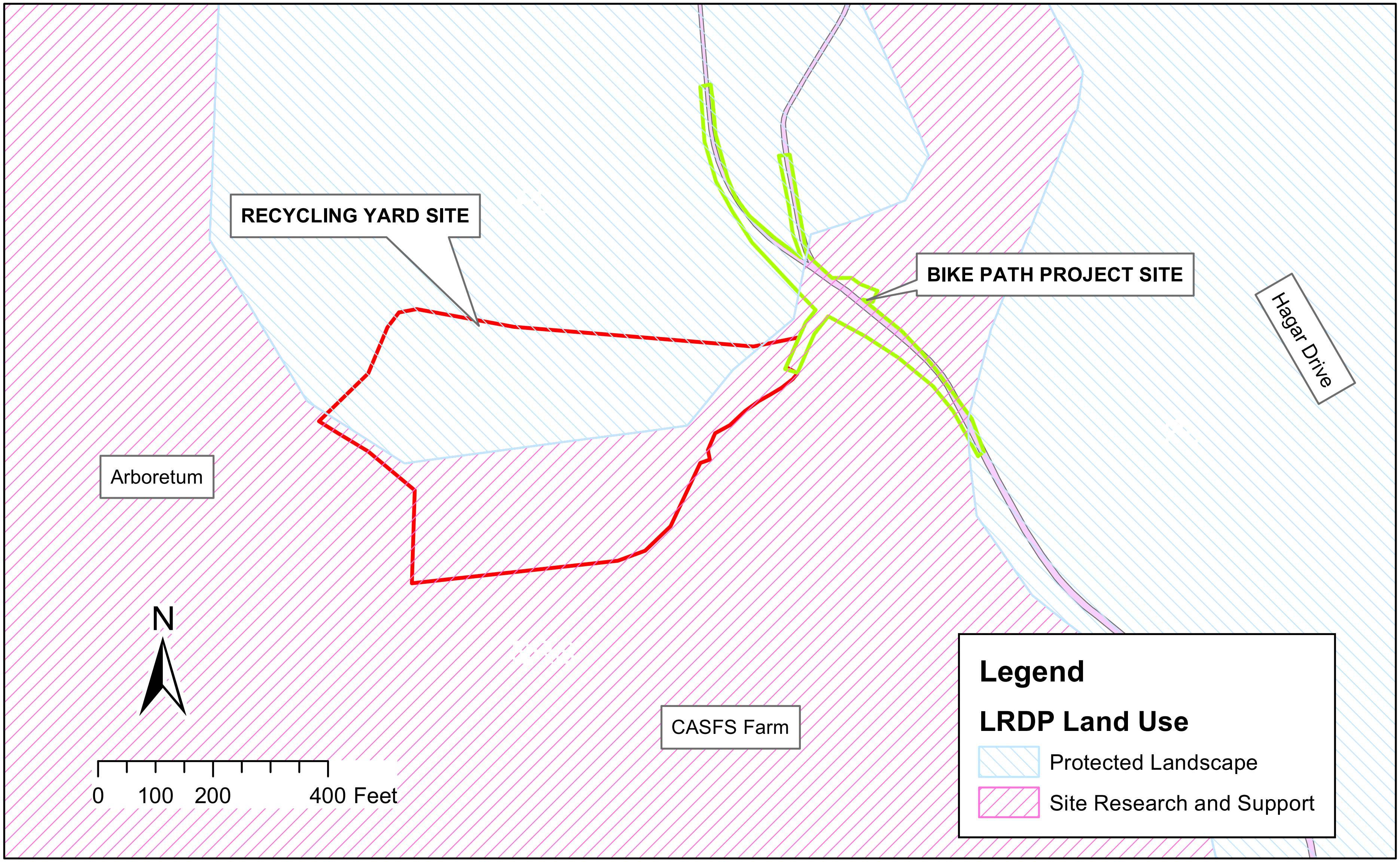

Figure 3-3: Existing LRDP Land Use Designations

Recycling Yard and Bike Path Improvement Projects
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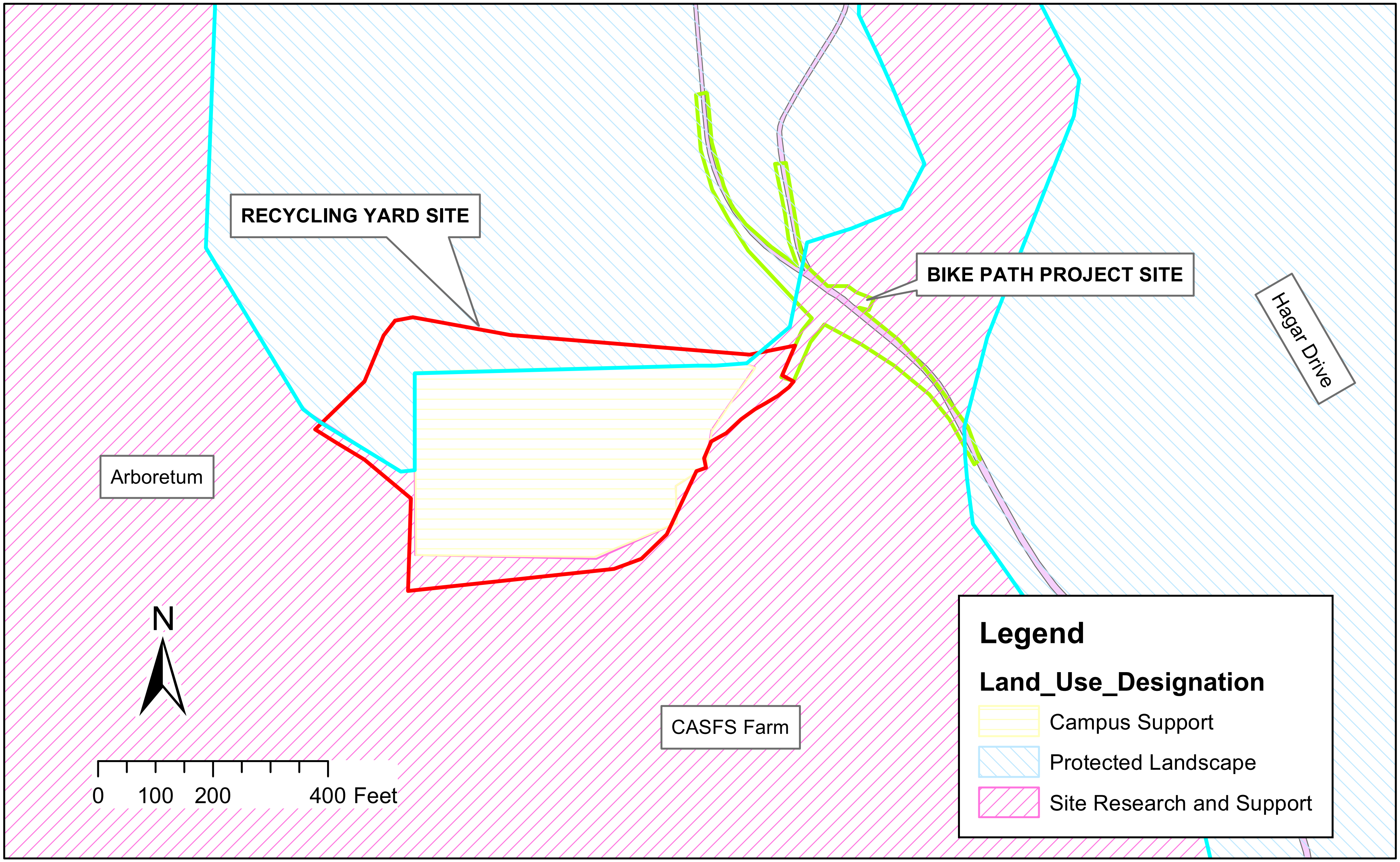

Figure 3-4: Proposed LRDP Land Use Designations

Recycling Yard and Bike Path Improvement Projects

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However, in the longer term, two to three additional staff could be required to enable the Campus to operate the new facility. The addition of this number of staff would not cause the campus population to exceed the population analyzed in the 2005 LRDP EIR.

The Recycling Yard Project would support the Campus' goal of achieving Zero Waste. Therefore, the project is consistent with the 2005 LRDP planning principle of promoting sustainability in campus operations, including recycling.

3.4.2 Bike Path Project

The proposed Bike Path Project would not result in an increase in Campus population, or add new building space. The re-aligned segment of the Bike Path, as well as the existing segment of the Bike Path to be moved would be on land designated PL and SRS. The 2005 LRDP allows limited development such as pedestrian and bicycle paths, utilities, and service roads on land designated as PL. The SRS land use designation permits the development of new buildings associated with existing and future approved research programs, principally in the fields of Social Sciences, Physical and Biological Sciences, Student Services, and Public Services. The proposed Bike Path Project would be consistent with these designations.

3.5 DETAILED PROJECT DESCRIPTION

3.5.1 Recycling Yard Project

<u>Existing Recycling Operations</u>

Mixed container and mixed paper bins are located at nearly 80 public locations throughout the campus. In office areas, additional bins are used for white office paper and mixed office paper, which are collected separately. Three Recycling Crew staff members using three box trucks collect full bins and replace them with empty bins. Periodically, the contents of the bins are transferred to roll-off boxes. Recycling team members visually inspect the bins and complete some initial sorting to remove items in the wrong bins. Office paper grades are transferred to large box bins in the Corporation Yard to be collected by a vendor. Periodically, the "mixed container" material is sorted using a line sorting machine, to separate out California Redemption value (CRV) containers in PET, aluminum and glass. These separated CRV materials flow into roll-off boxes for accumulation. When full, these boxes are hauled to commercial recycling facilities and sold. Non-CRV recyclable materials are generally hauled to the City of Santa Cruz Resource Recovery Facility, a distance of 6.5 miles each way, and transferred to the City's recycled materials stream. However, sometimes the Campus takes the recyclables to Castroville or San Jose. Campus users are asked to place cardboard in big green dumpsters that are located near the loading docks of most buildings. The cardboard is then collected using front loader trucks and trucked to vendors in San Jose. The truck fills roughly weekly, and the cardboard is then hauled to a vendor. Each Campus dining hall collects and compacts food scraps. Grounds Services collects the compacted materials and hauls them to the industrial composting facility at the Monterey Regional Waste Management District in Marina, approximately 40 miles south of the campus. Many of the housing areas located at the Colleges have local gardens that accept materials suitable for cold composting.

In addition to small scale mulching and composting which occurs at both the Farm and Arboretum, clean green waste is often stored in a ½ acre area adjacent to the Arboretum. Mulched items include organic debris such as landscape trimmings, brush, tree pruning, and grass clippings. Grounds Services also has a green waste storage area more centrally located in "the Bowl". At times, sufficient material builds up to hire a contract tub grinder to reduce the material to mulch usable on campus, but typically the material is hauled to the City of Santa Cruz green waste facility. Construction waste is handled in various ways. Typically a rolloff box is ordered by contractors or other units on campus. The box is generally sorted through and separated into dedicated roll off boxes for various materials and recycled to the extent feasible. Some contractors haul their own construction and demolition waste or contract with vendors for these services.

Recycling Yard Project, Phase I

Phase 1 of the Recycling Yard Project would provide a fenced, improved yard to enable the Campus to re-locate all recycling bin and equipment storage and construction/demolition and green waste activities, to the Project site. The yard would be graded and surfaced to provide 25,000 sf of compacted aggregate base for construction and demolition activities, bin and equipment storage, and access, and 15,000 sf of compacted earth for green waste and landscape supply storage. A new 6-foot tall fence would be constructed to match the adjacent Farm deer fencing. Modifications to the parking lot off Village Road would be required to enable Campus recycling and composting trucks to access the site.

Utilities and storm water drainage facilities to serve both phases of the Project site would be brought to the site and constructed as part of Phase 1. Connection to the Campus' water main can be made on the CASFS site road, which would require approximately 350 feet of trenching. The connections to the Campus sanitary sewer and electrical distribution system would be made at Village Road near the south end of the Village, which would require approximately 460 feet of trenching in or adjacent to the road.

A series of bio-filtration swales and bio-retention ponds to manage storm water runoff would be constructed at the west end of the site in Phase 1. Phase 1 of the Project also includes restoration to meadow of the area north of the site that is currently used for recycling activities and rock stockpiles.

Recycling Yard Project, Phase 2

Phase 2 of the Recycling Yard Project would construct a new 15,000-gsf structure, the Material Recovery Facility (MRF). All existing recycling activities that use mechanical equipment or require cover from rainfall would be moved to the MRF from other locations on campus. These include the container sorting line, paper sorting and storage, cardboard storage, and battery sorting and storage. The structure would accommodate a new in-vessel composter and food-waste tipping, and possibly a PET and aluminum baler. The structure would also provide about 1,000 gsf for a restroom and administration. The administration space would be flexible enough to serve as a meeting place for staff and small groups of visitors. At least a portion of the MRF would be 35 feet tall to allow front loader trucks to tip their contents.

Figure 3-5 shows the proposed Recycling Yard site plan. Preliminary elevation views of the proposed MRF building are shown on Figure 3-6.

Recycling Yard Project Operations

Phase 1

Following construction of Phase 1 of the Recycling Yard Project, recycling operations in the new yard would be similar to those already taking place in the unimproved area immediately north of the Project site. These include inventory and management of dumpsters and roll-off boxes, storage of materials in roll-off boxes for eventual delivery to vendors, and some box-to-box sorting of materials that are stored at the site temporarily.

Figure 3-5: Proposed Recycling Yard Site Plan

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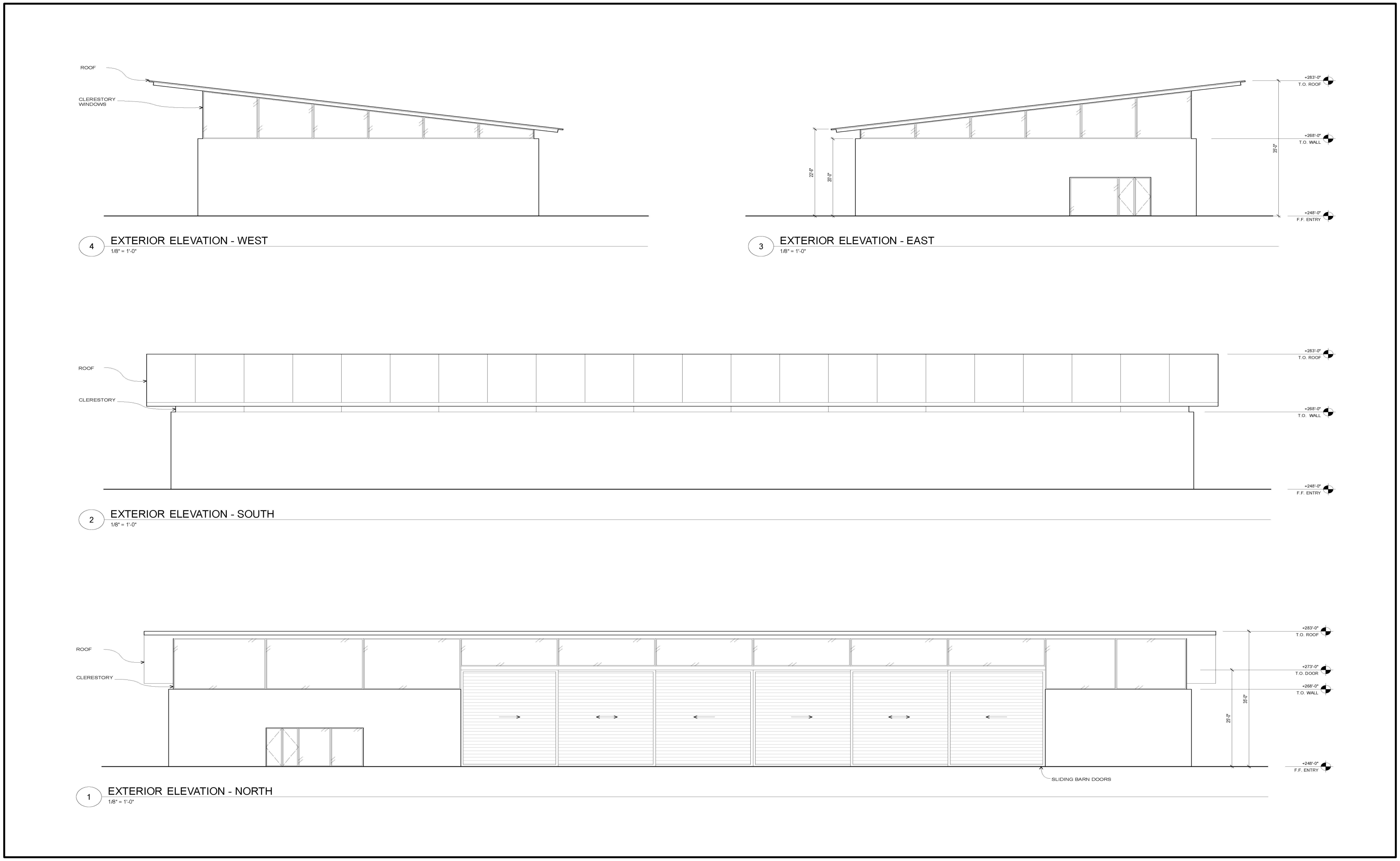

Figure 3-6: Elevation Views of Proposed Material Recovery Facility

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Phase 2

Following construction of Phase 2, most of the Campus' other recycling operations, including all sorting and storage, would move to the site. The recycling crew operates three box trucks and one back-loading 1-ton pick-up truck. Each of these three trucks would visit the new Recycling Yard to manage materials up to four times a day, Monday through Friday, beginning at 7 AM and completing their work in the yard by 2 PM. The sort line would be operated for three hours a day during normal business hours, three days a week, and preferably Tuesday, Wednesday and Thursday from 9 AM to noon. The new compost processing facility would also begin operating on site in Phase 2. The Campus estimates that the facility would process about 1,100 tons per year of organic materials. This would require that a roll-off box of compostable material would be delivered to the Recycling Yard every four hours of the work week, or twice a day, Monday through Friday. The organic materials would be pre-processed with a grinder, then mixed and loaded into the composting vessel. The grinder would operate for about four hours a day, three days a week.

The composting vessel would be fully enclosed and housed in the MRF structure. Organic feedstock would be fed in one end and, a few days later, raw compost would be discharged from the other end. After material has been processed in the in-vessel composter as specified by the manufacturer, raw compost materials will be stored in curing piles for at least a 90-day period in sheltered, three-sided CMU-constructed 30' X 30' X 16' bins.~~ The raw compost would be further cured in piles or windrows. Approximately 20,000 sf of the yard would be devoted to windrows.~~

The Campus estimates that the Project would result in 14 new round trips to the site by Campus trucks for recycling operations and organic feedstock delivery.

The number of off-campus trips made by Campus trucks to City of Santa Cruz Resource Recovery Facility, the Monterey Regional Waste Management facility, and other off-campus locations would be reduced from about 48 per month to about 21 per month because of the reduction in the transport of organic materials.

3.5.2 Bike Path Project

This project proposes to realign the downhill bike path above the intersection by shifting it 40 feet to the southwest at the intersection with Village Road (Figure 3-7). The roadway will also be reconfigured so that intersection is "squared up" to improve sight lines. Along with the improved intersection geometrics, the "dip" in the downhill bicycle path will be eliminated, and the reconstructed bicycle path will have a larger, 500-foot-radius curve. Lastly, the bike path will be reconfigured to move the junction of the uphill and downhill paths to the south, below the intersection, so that downhill cyclists, in particular, have more time to merge safely into the bidirectional path. The intersection would feature stop signs and be striped with stop bars in both directions and will also have bicycle crossing warning signs. Flashing beacon lights to notify vehicle drivers and pedestrians when cyclists are approaching the intersection would also be installed.

Eliminating the dip in the downhill path and squaring up and leveling the intersection will increase the sight distance both for downhill cyclists and for vehicles crossing the path. Cyclists will also have better control of their speed and bicycle as they approach the intersection due to a longer, smoother curve. Moving the junction of the two bike paths, will enable downhill cyclists will be able to focus on safely crossing the intersection and then focus on the merge, rather than facing the challenge of doing both at once, sometimes at high speeds. Each unidirectional bicycle path will be paved to 7 feet wide and the two-way bicycle path will be paved to a minimum of 12 feet wide.

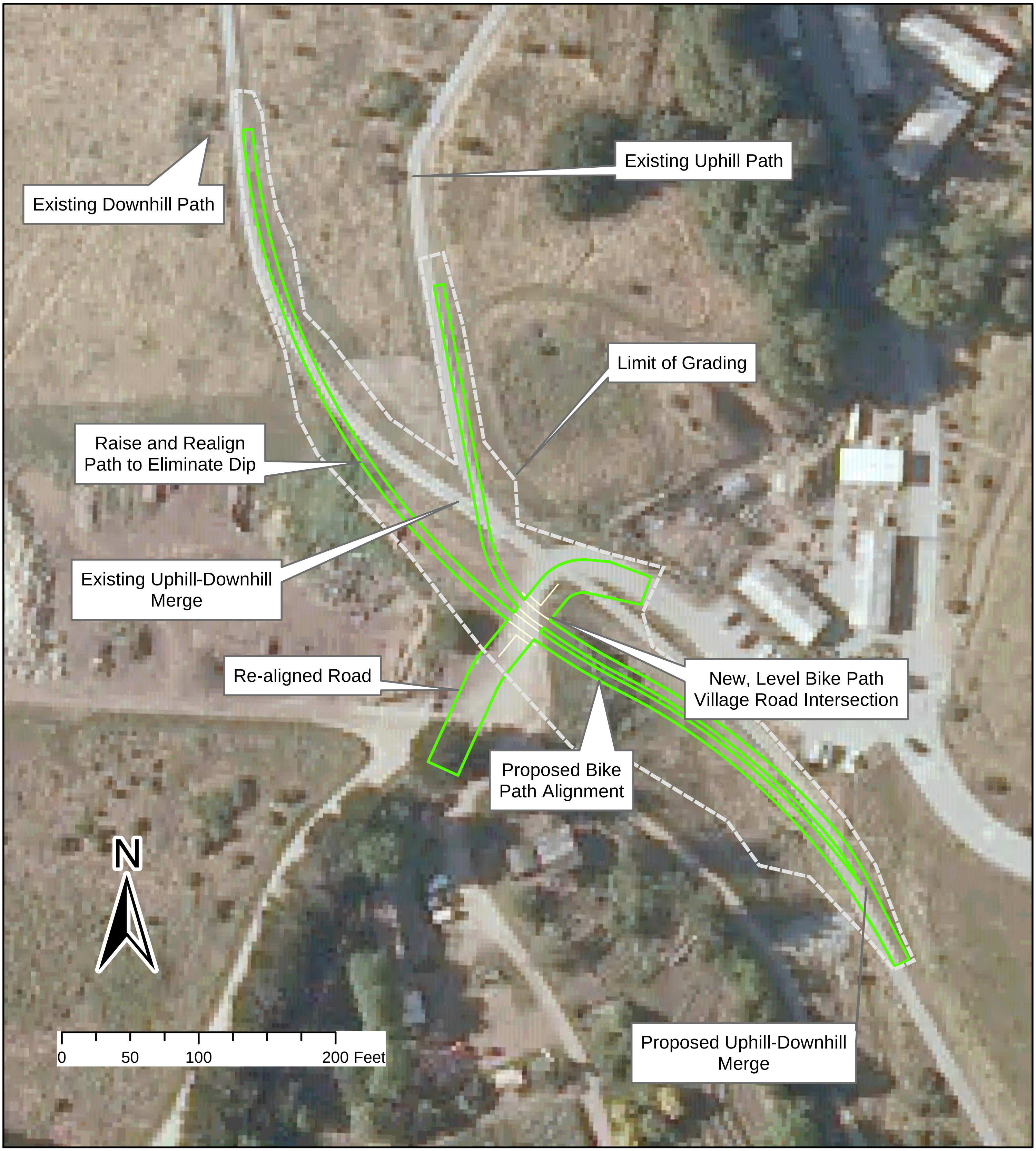

Figure 3-7: Proposed Bike Path Project

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The Bike Path Project would remove approximately 9,700 sf of existing asphalt bicycle path pavement and construct approximately 10,000 sf of new bicycle path and roadway pavement, thereby creating 300 sf of net new impervious surface. Areas disturbed by removal of the existing path would be planted with native grasses.

3.6 POPULATION

The Campus does not plan to hire additional staff to operate the new facility in the short term. However, in the long term, two to three new staff may be required. An average of five staff would be working on site throughout the week. This includes the Recycling Shop Supervisor, who would be on site full time, and others who would be on site part-time, including the sort line crew, staff operating the composting system, and student assistants.

The Bike Path Project would not accommodate additional Campus population.

3.7 CONSTRUCTION SCHEDULE AND STAGING

Construction of Phase 1 of the Recycling Yard and the Bike Path Project would be concurrent and would take approximately three months, beginning in mid-June and ending in mid-September 2016. The Campus proposes to begin construction of Phase 2 of the Recycling Yard Project in September 2016, with completion in March 2017.

Grading for the Recycling Yard site during Phase 1 construction would entail 6,970 cy of cut and 10,110 cy of fill. In Phase 2, over-excavation for the building foundation would result in 2,424 cy in cut. Additionally, the bicycle path realignment would entail 520 cy in cut and 1,730 cy in fill, resulting in net fill of approximately 1,200 cubic yards.

Construction of the Bike Path Project would require temporary closure of the bike path. Detour signs would be installed during construction to direct cyclists to alternate bike routes between the central and lower campus, which are available on existing campus roads and paths.

Construction staging would be accommodated on the Project sites; additional space may be provided at the existing Campus construction staging area off of Hagar Drive.

4 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

☐	Aesthetics	☐	Agricultural Resources	☐	Air Quality
☐	Biological Resources	☐	Cultural Resources	☐	Geology, Soils & Seismicity
☐	Hazards & Hazardous Materials	☐	Hydrology & Water Quality	☐	Land Use & Planning

☐	Mineral Resources	☐	Noise	☐	Population & Housing
☐	Public Services	☐	Recreation	☐	Transportation, Circulation & Parking

☐ Utilities/Service Systems ☐ Mandatory Findings of Significance

Based on the analysis presented in this Initial Study, it has been determined that for all resource areas, the proposed project would not result in any significant impacts that cannot be mitigated to a less-than-significant level. Please see the analyses below and refer to the Mitigated Negative Declaration (Appendix A to the Initial Study).

5 DETERMINATION

On the basis of this initial evaluation:

☐	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
☑	I find that although the proposed project could have a significant effect on the environment, the project impacts were adequately addressed in an earlier document or there will not be a significant effect in this case because revisions in the project have been made that will avoid or reduce any potential significant effects to a less than significant level. A MITIGATED NEGATIVE DECLARATION will be prepared.
☐	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Sarah C. Latham

4/23/15

Sarah C. Latham
Vice Chancellor - Business and Administrative Services

Date

6 EVALUATION OF ENVIRONMENTAL IMPACTS

Introduction

The following Environmental Checklist form is based on Appendix G of the CEQA Guidelines. The Environmental Checklist identifies potential project effects as corresponding to the following categories of impacts:

Potentially Significant Impact: There is substantial evidence that the effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

Project Impact Adequately Addressed in LRDP EIR: The potential impacts of the proposed project were adequately addressed in the LRDP EIR and mitigation measures identified in the LRDP EIR will mitigate any impacts of the proposed project to the extent feasible. All applicable LRDP EIR mitigation measures are incorporated into the project as proposed. The impact analysis in this document summarizes and cross references the relevant analysis in the LRDP EIR.

Less than Significant with Project-Level Mitigation Incorporated: The incorporation of project-specific mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." All project-level mitigation measures must be described, including a brief explanation of how the measures reduce the effect to a less than significant level.

Less-than-Significant Impact: An effect for which no significant impacts, only less than significant impacts, would result. The effects may or may not have been discussed in the LRDP Program EIR. The project impact is less than significant without the incorporation of LRDP or Project-level mitigation.

No Impact: The project would not create an impact in the category or the category does not apply. "No Impact" answers need to be adequately supported by the information sources cited, which show that the impact does not apply to projects like the one involved (*e.g.*, the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (*e.g.*, the project will not expose sensitive receptors to pollutants, based on a project specific screening analysis).

6.1 AESTHETICS

AESTHETICS Would the project…	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less than Significant with Project Level Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☑	☐	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☑	☐	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☑	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☑	☐	☐	☐

Aesthetics issues and programmatic mitigation measures applicable to LRDP development are described in Volume I, Section 4.1, of the 2005 LRDP EIR (UCSC 2006b). The following, previously adopted LRDP EIR mitigations for potential aesthetic impacts are applicable to and included in the project (the full text of the mitigation measures is included in Appendix B):

LRDP EIR Mitigation AES-3A (Visual simulations, maintain scenic resources)

LRDP EIR Mitigation AES-3B (Limit natural vegetation removal and cluster development at meadow edges)

LRDP EIR Mitigation AES-5A (Design Advisory Board review of project design for consistency with the valued elements of the visual landscape identified in the 2005 LRDP EIR)

LRDP EIR Mitigation AES-5C (minimize removal of health and mature trees around new projects)

LRDP EIR Mitigation AES-5F (evaluation for their aesthetic value, of trees identified for removal, and replacement of large unique trees)

LRDP EIR Mitigation AES-6A (Avoid new sources of reflected light)

LRDP EIR Mitigation AES-6B (use of directional, shielded lighting to minimize light spillage an atmospheric light pollution)

LRDP EIR Mitigation AES-6C (Design Advisory Board review of project-related light and glare)

LRDP EIR Mitigation AES-6E (Design Advisory Board review of outdoor lighting fixtures to ensure the minimum amount of lighting is used)

a) The 2005 LRDP EIR (Vol. 1, pp. 4.1-4 to 4.1-5) identifies both long-range and short-range scenic vistas from vantage points on and off campus. From the central campus, vantage points along the southern forest edge generally offer unbroken and sweeping views towards Monterey Bay. Prominent campus vantage points are the Cowell College plaza, Baskin Visual Arts Center, University House, the knoll at Porter College, and the field at Oakes College. Sweeping views across the meadows down to the bay are available from these points and from other points within the Great Meadow. Points along Glenn Coolidge

Drive offer panoramic views of the city and the bay, and of Pogonip City Park in the foreground. Similarly, points along Heller Drive and Empire Grade Road offer panoramic views of the bay. Important vantage points from the lower campus looking across open space areas towards the central campus include points along Empire Grade Road, Glenn Coolidge Drive, and Hagar Drive. From these vantage points, sweeping views are available across the meadows up to the forest edge. Short-range views on campus are influenced by topography, vegetation type and height density of vegetation, and density of buildings. Examples of locations that provide short-range scenic views and vistas include small meadows surrounded by forests or buildings, and relatively open meadowland vegetated with oaks and madrones. Short-range views through forested areas of ravines and pathways are available in some areas as well.

For the purposes of analyzing impacts to scenic vistas, the 2005 LRDP EIR (Vol. 1, pp. 4.1-10 to 4.1-12) identifies the following views as important scenic vistas: views of the Monterey Bay as viewed from Cowell College plaza, Baskin Visual Arts Center, University House, the knoll at Porter College, Stevenson College knoll, and the field at Oakes College; and views across the campus and wooded backdrop as viewed from locations along Empire Grade Road between Western Drive and the campus west entrance, Glenn Coolidge Drive between Hagar Drive and Cowell College, and Hagar Drive between Glenn Coolidge Drive and the East Remote parking lot.

To analyze the potential impacts of the proposed Recycling Yard Project on scenic vistas, visual simulations of the new Material Recovery Facility's appearance from important vantage points from which all or part of the Project site is visible: University House, the field at Oakes College, Hagar Drive, and a point on the Great Meadow Bike Path which offers a panoramic view of the Monterey Bay. The site is not visible from off campus. Figure 6.1-1 shows the locations of the vantage points, and Figures 6.1-2 through 6.1-5 show the results of the simulations.

As illustrated in Figure 6.1-2, a portion of the ridgeline of the new building would barely be visible, and probably not noticeable, from University House, between the edge of the meadow and the trees in the background. The impact to the scenic view from this vantage point would be less than significant. From the field at Oakes College (Figure 6.1-3), the new building would not alter views of the ocean, but would be clearly apparent as a building form against the background of existing trees. From Hagar Drive (Figure 6.1-4), only a portion of the building would be visible, and it would not figure prominently in the view or alter the overall impression of meadow with trees in the background. From the Great Meadow Bike Path (Figure 6.1-5), the new building would also be fully visible, although it would not affect views of the ocean or the overall effect of the panorama.

The 2005 LRDP EIR (Vol. 1, pp. 4.1-10 to 4.1-12) determined that development under the 2005 LRDP would not result in a significant impact on scenic vistas because the 2005 LRDP carefully designates areas for new development, it would avoid significant impacts on scenic vistas as viewed from locations on the campus. Furthermore, the 2005 LRDP (Section 4.C, page 47) includes a guideline to minimize the interruption of prime viewsheds and vantage points. Specifically, LRDP EIR determined that development would not significantly impact views from University House across the Great Meadow to the Monterey Bay because the Great Meadow would be designated Protected Landscape in the 2005 LRDP which would remain as undisturbed grassland.

The LRDP EIR determined that views of the ocean from Oakes College would not be affected because the land located immediately south of the field is designated as Campus Natural Reserve and therefore would remain in its natural state, and the land further south is designated as Site Research and Support. Although new buildings associated with research programs would be permitted in this area, the Campus envisioned that most of the buildings in this area would be small structures designed for use by the Arboretum and the CASFS. Therefore, the LRDP EIR concluded that development would not interrupt or adversely alter views of the ocean from the Oakes College area.

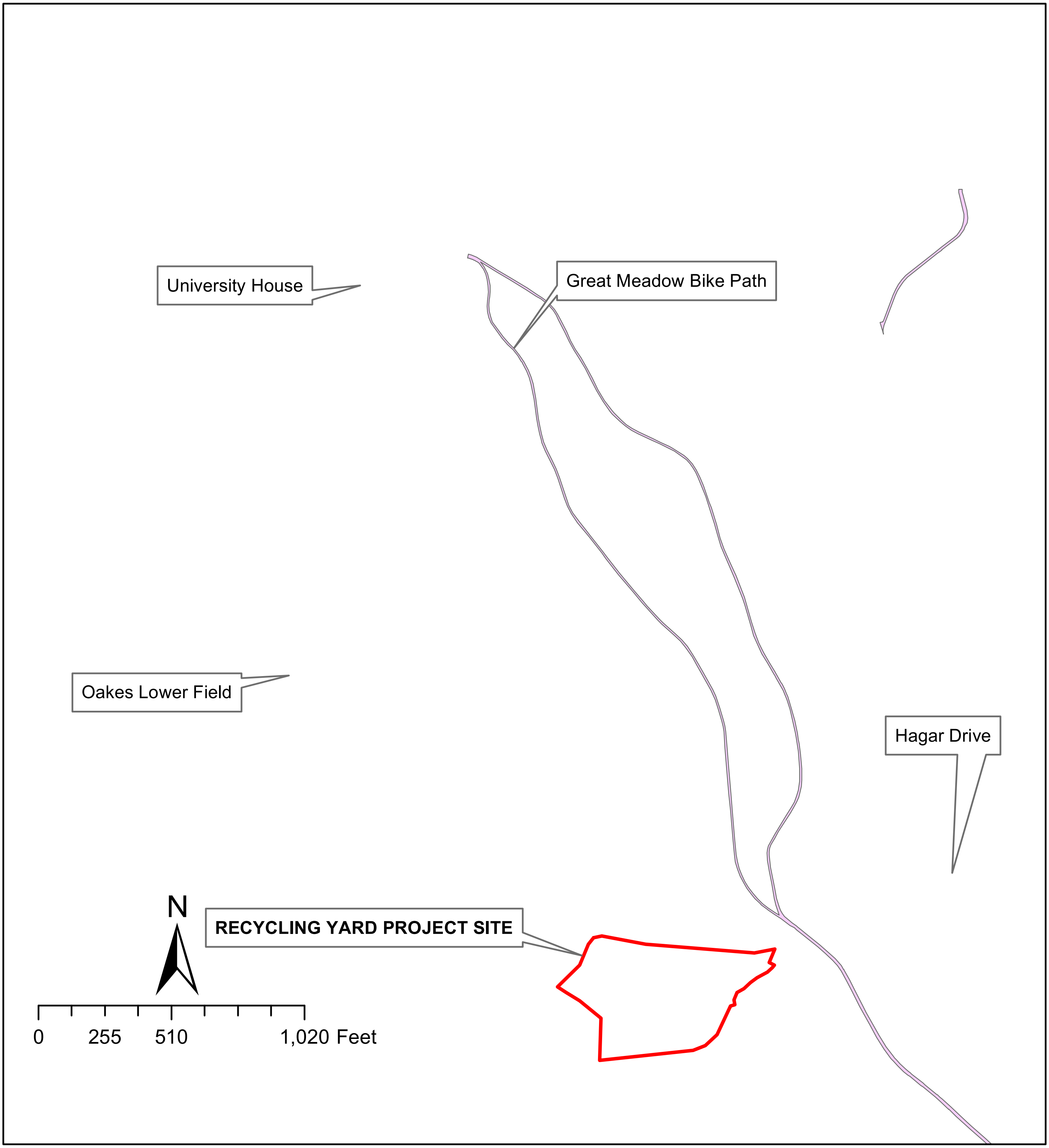

Figure 6.1-1: Visual Simulation Key Map

Recycling Yard and Bike Path Improvement Projects
March 2015

Figure 6.1-2a: Recycling Yard: Existing View From University House

Recycling Yard and Bike Path Improvement Projects
March 2015

Figure 6.1-2b: Recycling Yard: View From University House with Project

Recycling Yard and Bike Path Improvement Projects
March 2015

Figure 6.1-3a: Recycling Yard: Existing View from Oakes Lower Field

Recycling Yard and Bike Path Improvement Projects

March 2015

Figure 6.1-3b: Recycling Yard: View from Oakes Lower Field with Project

Recycling Yard and Bike Path Improvement Projects

March 2015

Figure 6.1-4a: Recycling Yard: Existing View from Hagar Drive

Recycling Yard and Bike Path Improvement Projects

March 2015

Figure 6.1-4b: Recycling Yard: View from Hagar Drive with Project

Recycling Yard and Bike Path Improvement Projects

March 2015

Figure 6.1-5a: Recycling Yard: Existing View from Bike Path

Recycling Yard and Bike Path Improvement Projects

March 2015

Figure 6.1-5b: Recycling Yard: View from Bike Path with Project

Recycling Yard and Bike Path Improvement Projects

March 2015

The 2005 LRDP EIR (Vol. 1, pp. 4.1-12 to 4.1-15) determined that development under the 2005 LRDP would not result in significant impacts to uphill scenic vistas that include the campus as viewed from vantage points on the campus and in the city of Santa Cruz, including views from Hagar Drive between Glenn Coolidge Drive and the East Remote parking lot. This conclusion was based on a visual simulation of future development in the Arts Area, which showed that the components of the uphill scenic vista that give it scenic quality, including the grasslands in the foreground and the tree line in the background, would not be obstructed or significantly altered (LRDP EIR, Figure 4.1-11). Since the 2005 LRDP would maintain the Great Meadow between Hagar Drive and the Arts Area as open grassland, no development could occur within this view that would obstruct views across the meadow.

As discussed in Section 3.5, above, development of the Recycling Yard Project on the proposed site would not be consistent with the existing LRDP land use designations of Protected Landscape and Site Research and Support. Although the Site Research and Support designation does allow development of buildings to support research programs associated with the Arboretum and the Center for Agroecology and Sustainable Food Systems (CASFS), the LRDP EIR anticipated that any such buildings would be small in scale and the proposed Material Recovery Facility building would be more massive than anticipated for the site in the LRDP EIR. The proposed designation of Campus Support does not identify the scale of development allowed.

As shown in Figure 6.1-2 and described above, the Project would not affect scenic views from University House. From Hagar Drive, the Project site is not visible in the uphill view across the Great Meadow towards the Arts Area, but from a view toward the west. That view is dominated by the open meadow in the foreground, leading to clusters of trees in the Jordan Gulch corridor, with a continuous line of trees visible in the far distance. The building would be partly visible through gap in the trees in the middle ground and would not obstruct the wide expanse of meadow in the foreground. The most distant tree line would still be visible beyond the building. In addition, the building would be visible only from vehicles along a short stretch of the road, and from the sidewalk on the east side of Hagar Drive. From the field at Oakes College (Figure 6.1-3), the new building would not alter views of the ocean or foreground views of the meadow, but would be clearly apparent as a building mass in the middle ground at the edge of an area of meadow with trees as a background. From the Great Meadow Bike Path (Figure 6.1-5), the new building would also be fully visible, although it would not affect views of the ocean. The impact of the project on scenic views from University House and Hagar Drive would be less than significant. However, the impacts to the view from Oakes College lower field and the bike path is a potentially significant impact. Mitigation Measure Recycling Yard AES-1 would require that the several measures be taken to reduce, break up, and soften the mass of the building as viewed from the lower field at Oakes College and the bike path. With implementation of these measures, the building would still be visible, but it would not draw attention from or interrupt the panoramic view of the meadows and forest rolling down toward the ocean, which would reduce the impact to a less-than-significant level.

Recycling Yard Mitigation Measure AES-1: The design of the proposed Material Recovery Facility shall be revised as follows:

- The building shall be oriented or configured to reduce the profile of the building as viewed from Oakes lower field and the upper part of the Great Meadow Bike path.

- The color of the building materials shall be selected to blend with the surrounding landscape, as determined through visual simulations using possible alternative materials.

- If programmatically feasible, the height of the roof line shall be varied, with the maximum height provided only in areas where required to accommodate tipping of front-loading trucks.

- Tall shrubs and/or fast-growing trees such as *Cupresus, Myrica, Arbutus, Quercus,* or *Garrya* shall be planted along the northern and western perimeters to screen the facility.

b) There are no officially designated state scenic highways in Santa Cruz County3 (State Scenic Highway Program website 2005). The County General Plan, however, designated Empire Grade Road as a scenic road. The City of Santa Cruz General Plan 1994-2005, which is cited in the LRDP EIR, describes the foothills of the Santa Cruz Mountains, including the UC Santa Cruz campus, as a scenic resource and identifies the portions of Hagar Drive and Glenn Coolidge Drive through the lower campus meadows as scenic drives.

The City's 2030 General Plan Update does not mention Hagar Drive or Coolidge Drive, but includes Action CD1.3.1, which encourages UCSC development to blend with the natural landscape and maintain natural ridgelines as seen from the city (City of Santa Cruz 2012).

The 2005 LRDP EIR (Vol. 1, pp. 4.1-15 to 4.1-16) defines scenic resources to include Cowell Ranch Historic District buildings and structures, rock exposures in the main entrance area, and all of the meadows on the lower campus, including Great Meadow, East Meadow, and the meadow west of Empire Grade Road.

The 2005 LRDP EIR (Vol. 1, pp. 4.1-15 to 4.1-16) determined that development along the upper edges of the Great Meadow in the Academic Core area near the Academic Resources Center, and the Meyer Drive extension, also in the upper portion of the Great Meadow, could substantially damage scenic resources on campus around the meadows, which would be a potentially significant impact. The 2005 LRDP EIR determined that this impact would be limited to the upper portion of the Great Meadow, because the remainder of the Great Meadow and most of the other lower campus meadows would be designated Protected Landscape, Campus Resource Land, or Campus Natural Reserve, and therefore would remain open grasslands. The potentially significant impact would be reduced to a less-than-significant level with implementation of LRDP EIR Mitigations AES-3A through AES-3C. LRDP EIR Mitigation AES-3A requires that the UCSC Design Advisory Board consider effects on scenic resources when reviewing projects under the 2005 LRDP to maintain scenic resources to the extent feasible. LRDP Mitigation AES-3B requires that, for development in meadow areas, the Campus shall limit the removal of natural vegetation, and cluster development at meadow edges to the extent feasible. LRDP Mitigation AES-3C identifies design standards for the new Meyer Drive.

The Recycling Yard and Bike Path project sites are not visible from any scenic highways. The Bike Path Project would is limited to modifications of the bike path and a portion of Village Road, and would not affect the meadow character of the setting. The Recycling Yard is not located near or within view of the historic buildings on the lower campus or other historic features. No special landmarks or landforms, including rock outcrops, are present on the site. LRDP EIR Mitigations AES-3A and AES-3B are applicable to and incorporated into the Project. Consistent with LRDP EIR Mitigation AES-3A, the Design Advisory Board will review the proposed Project during the detailed design process, and, consistent with LRDP EIR Mitigation AES-3B, the proposed development is at the edge of the meadow. However, as explained above in the analysis of impacts to scenic vistas, the proposed Material Recovery Facility building would be more massive than anticipated for the site in the LRDP EIR, which is a potentially significant impact to the meadow as a scenic resource. Recycling Yard Mitigation AES-1 would reduce this impact to a less-than-significant level by ensuring that the building materials blend with the surrounding landscape and the profile of the building against the trees is reduced.

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[3]Highway 1 segment from the Santa Cruz County line north up to Half Moon Bay is a designated state scenic highway.

c) The existing visual character of the Project site is created by its situation in a topographic depression at the lower edge of the Great Meadow, bounded by mature plantings of cypress and redwood trees on three sides. The unpaved road that bounds the site on the north, and the landscape storage area to the north of the road divide the site from the main expanse of the Great Meadow. The visual character of the site is also affected by the agricultural equipment stored on the adjacent portion of the Farm, the informal, unpaved parking area at entrance to the Farm, and the intensive bicycle and pedestrian use of the nearby formal and informal paths.

The proposed Bike Path Project would not significantly affect the visual character or quality of the site, as the physical changes would be limited to relocation of a portion of the path, slight enlargement of the area of pavement, and new striping and signage.

The proposed Material Recovery Facility would be much more massive than the buildings in the vicinity, including the buildings on the Farm and in the Village, which are mostly one-story. The new Recycling Yard would be fenced, thus effectively removing the Project site from the meadow. In addition to the new building, the site would have something of an industrial character, with truck activity and roll-off bin storage. Portions of the site devoted to compost curing and windrows would have more of an agricultural character. The proposed Project includes landscaping with native shrubs as screening.

The 2005 LRDP EIR (Vol. 1, pp. 4.1-18 to 4.1-19) concluded that, in general, development under the 2005 LRDP would respect the natural environment as much as possible, rely on infill and clustering to retain valuable visual and environmental features and distinctive physical features such as ravines and grasslands, and would minimize habitat fragmentation. However, new construction could affect the visual character of campus areas, if the new facilities are not designed to be visually or aesthetically compatible with their surroundings. The aesthetic character of pathways could be adversely affected by development if it substantially changed the varied visual experience of pedestrians using them. The 2005 LRDP EIR determined that this would be a potentially significant impact, which would be reduced to a less-than-significant level with implementation of LRDP EIR Mitigations AES-5A through AES-5-E.

LRDP EIR Mitigations AES-5A and AES-5C, which require, respectively, that the Design Advisory Board review of consistency of projects with valued elements of the campus landscape, and that development preserve healthy and mature trees to the greatest extent feasible, are applicable to and incorporated into the proposed Recycling Yard Project. Consistent with LRDP Mitigation AES-5A, which is included in this project, the project design will be reviewed by the UCSC Design Advisory Board. The Project would remove six mature cypress trees near the southern edge of the site. This would not have a substantial effect on the visual character of the area, as the densely planted row of cypresses along the northern edge of the Farm would remain. Recycling Yard Mitigation AES-1 would further reduce this less-than-significant impact by ensuring that the building materials blend with the surrounding landscape and the profile of the building against the trees is reduced.

d) The existing bike path is not lit, as use is not permitted after dark. However, the Bike Path Project may add small pedestrian scale lighting at the intersection of the Bike Path with Village Road to highlight the crossing for both vehicles and cyclists. The Recycling Yard would have site lighting for early morning operations. The Bike Path Project would install flashing beacon lights that would be triggered by cyclists approaching the intersection.

The 2005 LRDP EIR (Vol. 1, pp. 4.1-20 to 4.1-20) determined that new sources of light associated with development under the 2005 LRDP, including exterior lighting, lighted recreational facilities, walkways, parking lots, or parking structures, as well as glare from reflective surfaces or headlights of vehicular traffic would contribute to atmospheric light pollution. This would be a potentially significant impact which would be reduced to a less-than-significant level with implementation of LRDP Mitigations AES-6A through AES-6E. LRDP EIR Mitigations AES-6A, AES-6B, and AES-6E, which require the use of non-reflective exterior surfaces along meadow margins, the use of shielded and directional lighting to minimize light spillage, and consideration of light and glare by the Design Advisory Board, are applicable to and incorporated in the proposed Bike Path and Recycling Yard Projects. The LRDP EIR did not identify any potential light or glare impacts related to development in the lower campus meadows. The proposed Project site is not visible from off campus and the new building materials and lighting would be consistent with the standards identified in the LRDP EIR Mitigation Measures. The Project would not result in a new significant impact which was not identified in the LRDP EIR and Project-specific mitigation is not required.

Summary

All aesthetic impacts of the Bike path Project would be less than significant. 2005 LRDP EIR mitigations AES-5A, AES-5F, AES-6B, AES-6C and AES-6E are applicable to and incorporated into the Recycling Yard Project. The Material Recovery Facility building would result in potentially significant impacts to scenic vistas and scenic resources. These impacts would be reduced to a less-than-significant level with implementation of Recycling Yard Mitigation AES-1.

6.2 AGRICULTURAL RESOURCES

AGRICULTURAL RESOURCES **Would the project…**	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-Level Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?					✓
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				✓	
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g), timberland (as defined in Public Resources Code 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?					✓
d) Result in the loss of forest land or conversion of forest land to non-forest use?					✓
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?					✓

Agricultural Resources materials background relevant to LRDP development is presented in Volume I, Section 4.2, of the 2005 LRDP EIR (UCSC 2006b).

a) As State lands, campus lands are not eligible for Williamson Act agreements, nor are they subject to local zoning controls. Therefore, projects on campus lands have no potential conflict with existing zoning for agricultural use or a Williamson Act contract. Based on the Important Farmland map produced by the California Department of Conservation, Division of Land Resource Protection under the FMMP, the proposed project site is not designated as Prime Farmland, Unique Farmland or Farmland of Statewide Importance. Approximately 16 acres of the CASFS Farm are designated Unique Farmland in the FMMP. Unique Farmland is land with lesser quality soils used for the production of cash crops. On the campus, this land is used for agriculture and for research, training, and teaching concerning organic production methods. Neither the Bike Path nor the Recycling Project would convert any of the CASFS Farm lands to non-agricultural use. No impact would occur.

b) Under the 2005 LRDP, which is the land use plan that is applicable to the campus, a portion of the proposed site of the Recycling Yard is designated Site Research and Support (SRS). The SRS land use designation applies to lands used by the CASFS and the Arboretum in the southern campus, including the proposed Recycling Yard site, the 3-acre Chadwick Garden at the east end of McLaughlin Drive in the central campus, and 33 acres in the northwest corner of the campus where there is no existing or proposed development. No specific new use of the land designated SRS on the Recycling Yard site was envisioned in the 2005 LRDP. Potential inconsistency of the Recycling Yard with the adjacent agricultural use is analyzed in Section 3.10, *Land Use and Planning*. As explained in that section, potential noise and odors from the Recycling Yard could be incompatible with the use of the northern end of the Farm for apprentice housing, but these impacts would be less-than-significant with mitigation measures identified in Sections 6.3 and 6.12, *Air Quality* and *Noise*. Therefore the Recycling Yard Project would not result in a conflict with the existing agricultural use. The Bike Path Project would be constructed partly on land designated SRS. The bike path is consistent with that land use designation and no impact would occur.

c,d) The Bike Path and Recycling Yard Project sites are not forest land as defined in Public Resources Code Section 12220(g), are not zoned Timberland Production, and are not considered timberland as defined in Public Resources Code 4526. The Bike Path Project would not remove any trees. The Recycling Yard Project would remove six Monterey cypress trees but no commercial species trees are located on the Recycling Yard Project site. No impact would occur

e) There are no lands within 1-mile radius of the campus that are designated Important Farmland; most of the land adjoining the campus is within state or city parks and unlikely to be developed for other uses, and there are no ongoing agricultural or timber operations on any of the lands that adjoin the campus. As discussed in Section 6.13, *Population and Housing*, the project would not result in an increase in population that could contribute to the demand for housing and associated development in the region. Therefore, the Bike Path and Recycling Yard Projects would not result in the conversion of farmland to non-agricultural uses or conversion of forest land to non-forest use.

Summary

The Bike Path and Recycling Yard Projects would not result in significant impacts on agricultural or forestry resources. No mitigation is required.

6.3 AIR QUALITY

AIR QUALITY Would the project…	Potentially Significant Impact	Project Impact Adequately Addressed in the LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☑	☐

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☑	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☑	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☑	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☑	☐	☐

Air quality issues and programmatic mitigation measures applicable to LRDP development are described in Volume I, Section 4.3, of the 2005 LRDP EIR (UCSC 2006b). The following, previously adopted LRDP EIR mitigations for potential air quality impacts are applicable to and included in both the Recycling Yard and Bike Path Projects (the full text of the mitigation measures is included in Appendix B):

LRDP EIR Mitigation AIR-1 (construction dust control measures)

LRDP EIR Mitigation AIR-2A (conservation of natural gas/minimization of emissions from space and water heating)

LRDP EIR Mitigation AIR-6 (measures to minimize construction emissions)

6.3.1 Background

The state and federal Clean Air Acts mandate the control and reduction of certain air pollutants. Under these Acts, the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (ARB) have established ambient air quality standards for certain "criteria" pollutants. Ambient air pollutant concentrations are affected by the rates and distributions of corresponding air pollutant emissions, as well as by the climactic and topographic influences discussed above. The primary determinant of concentrations of non-reactive pollutants (such as CO and PM10) is proximity to major sources. Ambient CO levels in particular usually closely follow the spatial and temporal distributions of vehicular traffic. A discussion of primary criteria pollutants is provided below.

Ozone. Ozone is a colorless gas with a pungent odor. Most ozone in the atmosphere is formed as a result of the interaction of ultraviolet light, reactive organic gases (ROG), and oxides of nitrogen (NOX). ROG (the organic compound fraction relevant to ozone formation, and sufficiently equivalent for the purposes of this analysis to volatile organic compounds, or VOC[4]) is composed of non-methane hydrocarbons (with some specific exclusions), and NOX is made of different chemical combinations of nitrogen and oxygen, mainly NO and NO2. A highly reactive molecule, ozone readily combines with many different components of the atmosphere. Consequently, high levels of ozone tend to exist only while high ROG and NOX levels are present to sustain the ozone formation process. Once the precursors have been depleted, ozone levels rapidly decline. Because these reactions occur on a regional rather than local scale, ozone is considered a regional pollutant.

Carbon Monoxide. Carbon monoxide (CO) is an odorless, colorless, gas. CO causes a number of health problems including fatigue, headache, confusion, and dizziness. The incomplete combustion of petroleum fuels in on-road vehicles and at power plants is a major cause of CO. CO is also produced during the

[4] ROG is equivalent to volatile organic compounds (VOC) per MBUAPCD Rule 101, 2.32

winter from wood stoves and fireplaces. CO tends to dissipate rapidly into the atmosphere; consequently, violations of the state CO standard are generally associated with major roadway intersections during peak hour traffic conditions.

Localized carbon monoxide "hotspots" can occur at intersections with heavy peak hour traffic. Specifically, hotspots can be created at intersections where traffic levels are sufficiently high such that the local CO concentration exceeds the federal Ambient Air Quality Standards (AAQS) of 35.0 parts per million (ppm) or the state AAQS of 20.0 ppm.

Nitrogen Dioxide. Nitrogen dioxide (NO2) is a by-product of fuel combustion, with the primary source being motor vehicles and industrial boilers and furnaces. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts rapidly to form NO2, creating the mixture of NO and NO2 commonly called NOX. Nitrogen dioxide is an acute irritant. A relationship between NO2 and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 parts per million (ppm) may occur. Nitrogen dioxide absorbs blue light and causes a reddish brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of PM10 and acid rain.

Particulate Matter. Suspended particulate matter (airborne dust) consists of particles small enough to remain suspended in the air for long periods. Fine particulate matter includes particles small enough to be inhaled, pass through the respiratory system, and lodge in the lungs, with resultant health effects. Particulate matter can include materials such as sulfates and nitrates, which are particularly damaging to the lungs. Health effects studies resulted in revision of the Total Suspended Particulate (TSP) standard in 1987 to focus on particulates that are small enough to be considered "inhalable," i.e. 10 microns or less in size (PM10). In July of 1997, a further revision of the federal standard added criteria for PM2.5, reflecting recent studies that suggested that particulates less than 2.5 microns in diameter are of particular concern.

The ARB and the EPA establish ambient air quality standards for major pollutants at thresholds intended to protect public health. Federal and state standards have been established for ozone, carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), lead, and fine particulates (PM10 and PM2.5). Table 6.3-1 summarizes the California Ambient Air Quality Standards (CAAQS) and the National Ambient Air Quality Standards (NAAQS) for each of these pollutants. Standards have been set at levels intended to be protective of public health. California standards are more restrictive than federal standards for each of these pollutants except for lead and the eight-hour average for CO. Depending on whether the standards are met or exceeded, the local air basin is classified as in "attainment" or "non-attainment." Some areas are unclassified, which means no monitoring data are available. Unclassified areas are considered to be in attainment.

Table 6.3-1
Current Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standards	California Standard
Ozone	1-Hour	---	0.09 ppm
	8-Hour	0.075 µg/m^3	0.070 µg/m^3
PM_{10}	24-Hour	150 µg/m^3	50 µg/m^3
	Annual	---	20 µg/m^3
$PM_{2.5}$	24-Hour	35 µg/m^3	---
	Annual	12 µg/m^3	12 µg/m^3
Carbon Monoxide	8-Hour	9.0 ppm	9.0 ppm
	1-Hour	35.0 ppm	20.0 ppm

Table 6.3-1
Current Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standards	California Standard
Nitrogen Dioxide	Annual	0.053 ppm	0.030 ppm
	1-Hour	0.100 ppm	0.18 ppm
Sulfur Dioxide	24-Hour	---	0.04 ppm
	3-Hour	0.5 ppm (secondary)	---
	1-Hour	0.075 ppm (primary)	0.25 ppm
Lead	30-Day Average	---	1.5 µg/m^3
	3-Month Average	0.15 µg/m^3	---

ppm = parts per million µg/m^3 = micrograms per cubic meter

Source: California Air Resources Board, http://www.arb.ca.gov/research/aaqs/aaqs2.pdf, last updated June, 2013.

Current Ambient Air Quality. Local air districts and the ARB monitor ambient air quality to assure that air quality standards are met, and if they are not met, to also develop strategies to meet the standards. Air quality monitoring stations measure pollutant ground-level concentrations (typically, ten feet aboveground level). Table 6.3-2 summarizes the state and federal attainment status for criteria pollutants in the NCCAB.

Table 6.3-2
Attainment Status of the North Central Coast Air Basin

Pollutant	State Standard	Federal Standard
Ozone (O_3)	**Non-attainment**[1]	Attainment/Unclassified[2]
Inhalable Particulates (PM_{10})	**Non-attainment**	Attainment
Fine Particulates ($PM_{2.5}$)	Attainment	Attainment/Unclassified[3]
Carbon Monoxide (CO)	Unclassified (Santa Cruz County)	Attainment/Unclassified
Nitrogen Dioxide (NO_X)	Attainment	Attainment/Unclassified[4]
Sulfur Dioxide (SO_X)	Attainment	Attainment[5]
Lead	Attainment	Attainment/Unclassified[6]

[1] Effective July 26, 2007, the ARB designated the NCCAB a non-attainment area for the state ozone standard, which was revised in 2006 to include an 8-hour standard of 0.070 ppm.

[2] On March 12, 2008, USEPA adopted a new 8-hour ozone standard of 0.075 ppm, while temporarily retaining the existing 8-hour standard of 0.08 ppm.

[3] In 2006, the Federal 24-hour standard for $PM_{2.5}$ was revised from 65 to 35 µg/m^3. Although final designations have yet to be made, it is expected that the NCCAB will remain designated unclassified/attainment.

[4] In 2011, EPA indicated it plans to designate the entire state as attainment/unclassified for the 2010 NO2 standard. Final designations have yet to be made by EPA.

[5] In June 2011, the ARB recommended to EPA that the entire state be designated as attainment for the 2010 primary SO_2 standard. Final designations have yet to be made by EPA.

[6] On October 15, 2008 EPA substantially strengthened the national ambient air quality standard for lead by lowering the level of the primary standard from 1.5 µg/m^3 to 0.15 µg/m^3. Final designations were made by EPA in November 2011.

Note: Non-attainment pollutants are highlighted in **Bold**.

As shown in Table 6.3-2, although the North Central Coast Air Basin (NCCAB) is in attainment or unclassifiable of all federal ambient air quality standards (AAQS), it is designated as non-attainment with respect to the more stringent state PM_{10} standard and the state's eight-hour ozone standard.

Ambient air quality is monitored at seven MBUAPCD-operated monitoring stations located in Salinas, Hollister, Carmel Valley, Santa Cruz, Scotts Valley, Watsonville, and Davenport. Table 6.3-3 summarizes the representative annual air quality data for the project vicinity over the past three years. The nearest monitoring station to the project site is the Santa Cruz – 2544 Soquel Avenue monitoring station, which is located approximately four miles east of the site.

Table 6.3-3
Ambient Air Quality at the Santa Cruz – 2544 Soquel Avenue Monitoring Station

Pollutant	2011	2012	2013
Ozone, ppm - Worst Hour	0.071	0.071	0.069
Number of days of State exceedances (>0.09 ppm)	0	0	0
Ozone, ppm – Worst 8 Hours	0.064	0.052	0.055
Number of days of State exceedances (>0.070)	0	0	0
Number of days of Federal exceedances (>0.075)	0	0	0
Particulate Matter <10 microns, µg/m^3 Worst 24 Hours*	21.0	N/A	N/A
Estimated Number of Days of State exceedances (>50 µg/m^3) *	N/A	N/A	N/A
Estimated Number of Days of Federal exceedances (>150 µg/m^3) *	N/A	N/A	N/A
Particulate Matter <2.5 microns, µg/m^3 Worst 24 Hours*	17.2	13.8	19.0
Estimated Number of Days of Federal exceedances (>35 µg/m^3) *	0	0	0

N/A = not available
Source: California Air Resources Board, 2011, 2012, 2013 Annual Air Quality Data Summaries available at http://www.arb.ca.gov/adam/topfour/topfour1.php

Given that the NCCAB is designated as non-attainment for state standards for ozone and PM_{10}, these are the primary pollutants of concern for the NCCAB. As indicated in Table 6.3-3, there were no federal or state ozone exceedances at the nearest NCCAB monitoring stations in 2011, 2012, or 2013. Although data was not available for PM_{10} in 2012 or 2013, there were no exceedances of either the federal or state standards for the pollutant from 2008-2010.

6.3.2 Regulatory Setting

The project site is within the North Central Coast Air Basin (the Basin), which is under the jurisdiction of the Monterey Bay Unified Air Pollution Control District (MBUAPCD). The local air quality management agency (MBUAPCD) is required to monitor air pollutant levels to ensure that applicable air quality standards are met and, if they are not met, to develop strategies to meet the standards.

Depending on whether or not the standards are met or exceeded, the air basin is classified as being in "attainment" or "nonattainment." The Basin in which the project site is located is in nonattainment for the State Ambient Air Quality Standards (AAQS) for ozone and PM_{10} (MBUAPCD 2013). Because the Basin currently exceeds state ambient air quality standards it is required to implement strategies that would reduce the pollutant levels to recognized acceptable standards. This non-attainment status is a result of several factors, the primary being the naturally adverse meteorological conditions that limit the dispersion and diffusion of pollutants, the limited capacity of the local airshed to eliminate pollutants from the air, and the number, type, and density of emission sources within the Basin. The MBUAPCD has adopted an Air Quality Management Plan (AQMP) that provides a strategy for the attainment of state and federal air quality standards (MBUAPCD 2008).

The MBUAPCD has established the following significance thresholds for project operations within the Basin:

- 137 pounds per day of reactive organic compounds (ROC (also known as ROG or VOC))
- 137 pounds per day of nitrogen oxides (NOx)
- 550 pounds per day of carbon monoxide (CO)
- 150 pounds per day of sulphur oxides (SOx)
- 82 pounds per day of particulate matter less than 10 microns in diameter (PM_{10})

The MBUAPCD has also adopted the following thresholds for temporary construction-related pollutant emissions:

- 82 pounds per day of $PM_{2.5}$

The MBUAPCD also considers indirect sources that would significantly affect levels of service at intersections or road sections to be potentially significant for carbon monoxide production.

6.3.3 Discussion of Checklist Questions

a) According to the MBUAPCD CEQA Air Quality Guidelines (MBUAPCD 2008a), a project that is consistent with the AQMP is considered to be accommodated in the AQMP and therefore would not have a significant impact on regional air quality. The AQMP for the MPUAPCD is based on population and housing forecasts prepared by the Association of Monterey Bay Area Governments (AMBAG) (MBUAPCD 2008b). The proposed project would not result in an increase in population or housing, or result in a growth in employment that could trigger direct or indirect population increase. Therefore, the project would not conflict with the AQMP. Impacts would be less than significant.

b-d) An evaluation of both short-term and long-term air pollutant emissions is provided in the paragraphs below.

Construction Impacts – Recycling Yard

The proposed project would disturb a total of approximately six acres for installation of new facilities for the Recycling Yard. Project construction would generate temporary air pollutant emissions. These impacts are associated with fugitive dust (PM_{10} and $PM_{2.5}$) and exhaust emissions from heavy construction vehicles, in addition to reactive organic gases (ROG) that would be released during the drying phase upon application of architectural coatings. Construction would generally consist of site preparation, grading, construction of the proposed facilities, paving, and architectural coating. Construction activities could result in temporary local increases in dust and PM_{10} concentrations, and as a result local visibility could be adversely affected on a temporary basis during the construction period. In addition, larger dust particles could settle out of the atmosphere close to the construction site resulting in a potential soiling nuisance for adjacent uses. PM_{10} emitted during construction activities varies greatly, depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, and weather conditions.

Construction of the Recycling Yard would be split into two phases, as described in the Project Description. Phase 1 would occur over approximately three months, from June 2016 to September 2016. Phase 2 would occur over six months, from September 2016 to March 2017. Specific construction activities have been identified within each of the two phases and this information was included in the emissions calculations. The CalEEMod calculations are available in Appendix D.

Table 6.3-4 summarizes the estimated maximum daily construction emissions of ROG, NO_X, CO, SO_x, PM_{10}, and $PM_{2.5}$ relative to the significance thresholds. As shown in Table 6.3-4, construction emissions would not exceed the established thresholds for any criteria pollutant. Consequently, the Recycling Yard Project's regional air quality impacts during construction would be less than significant.

Table 6.3-4

Recycling Yard Project Estimated Construction Maximum Daily Air Pollutant Emissions (lbs/day)

	ROG* (lbs/day)	**NO_X*** (lbs/day)	**CO*** (lbs/day)	**SO_X*** (lbs/day)	**PM_{10}** (lbs/day)	**PM_{10}** (off-site)
Maximum lbs/day Phase 1	9.6	99.1	68.6	0.1	7.0	5.2
Maximum lbs/day Phase 2	20.1	78.6	53.9	0.1	4.9	4.4
Threshold	-	-	-	-	**82**	-
Threshold Exceeded?	-	-	-	-	**No**	-

Notes: All calculations were made using CalEEMod. See Appendix D for calculations. Demolition, Site Preparation, Grading, Trenching and Paving totals include worker trips, construction vehicle emissions and fugitive dust.

Construction Impacts – Bike Path

The proposed Bike Path Project would disturb a total of approximately 0.23 acre through demolition of the existing bike path and construction of the new bike path. Construction would generally consist of demolition, site preparation, grading, trenching, and paving. Construction of the Bike Path Project would occur over approximately three months, from June 2016 to September 2016, concurrently with Phase 1 of the Recycling Yard Project. Specific construction activities have been identified within each phase and this information was included in the emissions calculations. The CalEEMod calculations are available in Appendix D.

Table 6.3-5 summarizes the estimated maximum daily construction emissions of ROG, NO_X, CO, SO_x, PM_{10}, and $PM_{2.5}$ from the Bike Path Project relative to the significance thresholds. As shown in Table 6.3-5, construction emissions would not exceed the established thresholds for any criteria pollutant. Consequently, the Bike Path Project's regional air quality impacts during construction would be less than significant.

Table 6.3-5

Bike Path Project Estimated Construction Maximum Daily Air Pollutant Emissions (lbs/day)

	ROG* (lbs/day)	**NO_X*** (lbs/day)	**CO*** (lbs/day)	**SO_X*** (lbs/day)	**PM_{10}** (lbs/day)	**PM_{10}** (off-site)
Maximum lbs/day	6.4	63.0	40.6	0.1	4.3	6
Threshold	-	-	-	-	**82**	-
Threshold Exceeded?	-	-	-	-	**No**	-

Notes: All calculations were made using CalEEMod. See Appendix D for calculations. Demolition, Site Preparation, Grading, Trenching and Paving totals include worker trips, construction vehicle emissions and fugitive dust.

Maximum emissions of PM_{10} would be 11.3 pounds per day during the concurrent construction of the Bike Path Project and Phase 1 of the Recycling Yard Project. This would also be substantially less than the threshold of 82 pounds per day and the impact would be less than significant.

LRDP Mitigation AIR-1, which requires specific contract requirements designed to minimize construction fugitive dust, is applicable to both projects. These require that the contractor implement dust control measures recommended by the MBUAPCD to reduce PM_{10} generated by utility trenching or by demolition. The projects incorporate and would implement this previously adopted LRDP mitigation to further reduce the less than significant impact of both projects with respect to construction emissions of PM_{10}. Compliance with MBUAPCD regulations is specifically required by the Campus' contract documents.

Operational Impacts – Recycling Yard

Phase 1 of the proposed Recycling Yard Project would include operations similar to those already occurring in the unimproved area immediately north of the project site. These activities include inventory and management of dumpsters and roll-off boxes, storage of materials in roll-off boxes for eventual delivery to vendors, some box-to-box sorting of materials that are stored at the site temporarily, mulch storage and loading, log storage and processing, and construction material storage and loading. No new operational emissions compared to existing conditions would result from the change in location for these activities.

Phase 2 of the proposed Recycling Yard Project would include construction and operation of a 15,000 gross square foot (gsf) building with a PED and aluminum baler and in-vessel composter with an associated loader, and material grinder (RotoChopper) for composting operations. The loader, and grinder would operate using diesel fuel and would have associated emissions, while the baler and composter would operate on electricity and are therefore not included in the air quality analysis, as electricity is generated off-site. The analysis assumes two new on-campus truck trips per day to deliver raw materials for the composting system.

Table 6.3-6 summarizes estimated emissions associated with operation of the proposed Recycling Yard Project after Phase 2 is completed. Project-related operational air pollutant emissions would be due to mobile source emissions, natural gas combustion, and long-term, low-level architectural coating emissions as the proposed structure would be repainted over the life of the project (area sources). Fourteen additional daily on-campus vehicle trips would also result from the project as compared to existing conditions; these trips are included in the emissions calculations. The emissions that would result from four hours of operation of the grinder (RotoChopper) and loader were also estimated separately from CalEEMod, based on diesel emissions factors and diesel usage for the equipment. These emissions are also included in Table 6.3-6.

Table 6.3-6
Recycling Yard Project Operational Emissions (lbs/day)

Emission Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Mobile (On-Campus Truck Trips)	0.1	0.4	1.6	< 0.1	0.2	0.1
Mobile (Off-Campus Truck Trips)	- 2.0	- 40.1	- 14.2	- 0.1	- 6.7	- 1.5
Energy (Natural Gas)	< 0.1	0.1	0.1	< 0.1	< 0.1	< 0.1
Area (Architectural Coating)	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Grinder (RotoChopper)	5.1	2.7	1.7	0.1	0.2	0.1

Table 6.3-6
Recycling Yard Project Operational Emissions (lbs/day)

Emission Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Loader	4.3	2.3	1.4	0.1	0.1	0.1
Total Emissions	**7.9**	**-34.6**	**-9.4**	**0.1**	**-6.2**	**-1.2**
Threshold	137	137	550	-	82	-
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source: See AppendixD for CalEEMod v.2013.2.2 model output.
Note: the CalEEMod model run included a diesel-fueled trammel. However, because the trammel is now anticipated to be powered by an electrical motor and likely will be an integral part of the composting vessel, it is not included in the emission summary here.
[1] For offroad diesel internal combustion, total particulate matter = PM_{10}, while $PM_{2.5}$ is 0.89 (92%) of PM_{10} (SCAQMD 2006).

As shown in Table 6.3-6, operational emissions from the Recycling Yard Project would not exceed the significance thresholds, and would in fact result in a net emissions reduction for four of six pollutants compared to existing conditions. This net reduction occurs because the Recycling Yard Project would reduce off-site truck trips needed for hauling material to the landfill and other waste-collecting locations (see Appendix D for detailed information regarding truck distribution). These vehicle emissions reductions would be greater than anticipated operational emissions from other sources (e.g. energy use and operation of the grinder and loader). Impacts would therefore be less than significant.

In addition, impacts related to CO concentrations would similarly be less than significant based on the long-term reduction in off-campus traffic. Short-term increases in construction traffic would be temporary (approximately three months for Phase 1 and six months for Phase 2) and would not reach levels anticipated to increase CO concentrations. Because the proposed project would reduce long-term traffic volumes compared to existing conditions, impacts related to localized CO concentrations would be less than significant.

The Recycling Yard Project would result in a net reduction in emissions of NO_x, PM_{10}, and $PM_{2.5}$, and the increase in VOC emissions would be substantially below the significance threshold. Consequently, the Recycling Yard Project operations would not have a significant adverse effect on regional air quality impacts.

The 2005 LRDP EIR (Vol. 1, p. 4.3-25, and Vol. 4, p. 2-8) determined that development under the 2005 LRDP would not result in emissions of VOCs exceeding the MBUAPCD significance threshold. In addition, the EIR identified LRDP EIR Mitigation Measures AIR-2A, AIR-2B, and AIR-2C to reduce these emission. LRDP Mitigation Measure AIR-2A is applicable to and included in the proposed Recycling Yard Project. The largest contributor to VOC emissions under the 2005 LRDP would be vehicle trips. The air quality analysis was based on the traffic analysis, which projected that, under the 2005 LRDP, the number of daily vehicle trips to the campus would increase by 6,678 (Vol. 4, p. 2-13). In fact, since 2006, when the 2005 LRDP was approved, the number of vehicle trips has decreased by about 5,000. Although the emissions associated with operation of the new Recycling Yard were not taken into account in the LRDP EIR, these emissions would not cause the total VOC emissions under the 2005 LRDP to exceed the significance threshold. The 2005 LRDP EIR identified a significant and unavoidable impact associated with NO_x emissions; however, the Recycling Yard Project would result in a net decrease in Campus NO_x emissions. Therefore, the Recycling Yard Project would not contribute to a significant program-level impact.[5]

Operational Impacts – Bike Path

The Bike Path Project would not result in any operational emissions, as operations associated with the completed path would include use by bicycles on-campus similar to the use of the existing path. The Bike Path Project would have no operational impact associated with air quality.

e) **Odors - Recycling Yard Project**

The proposed Recycling Yard Project would locate composting facilities within 150 feet of residential uses. While the odors associated with the recycling of materials would not be substantial, as the most common materials are plastics, aluminum, and paper products, if a composting machine is installed, it would have the potential to create odors. The composting facility would process organic materials; the organic material would be contained within the in-vessel composter within the Materials Recovery Facility (MRF) during the composting process for the majority of the time that it is on-site. However, some raw material staging and grinding process, may take place outside the enclosed composter. This exposure would be temporary and intermittent. However, as the nearest receptors are only 150 feet from the site, the impact would be potentially significant. Implementation of Mitigation Measure AQ-1 would reduce this to a less than significant level.

Recycling Yard Mitigation AQ-1: UCSC Physical Plant shall prepare an Odor Impact Minimization Plan before a composting system is installed at the Recycling Yard and implement the Plan when the composting program begins operation. The Plan shall include the following items:

- A complaint response protocol;
- A description of design considerations and/or projected ranges of optimal operation to be employed in minimizing odor, including method and degree of aeration, moisture content of materials, airborne emission production, process water distribution, pad and site drainage and permeability, equipment reliability, personnel training, weather event impacts, utility service interruptions, and site specific concerns; and,
- A description of operating procedures for minimizing odor, including aeration, moisture management, drainage controls, pad maintenance, wastewater pond controls, storage practices (e.g., storage time and pile geometry), contingency plans (i.e., equipment, water, power, and personnel), biofiltration, and tarping.

Odors – Bike Path Project

The proposed Bike Path Project would not result in the generation of odors during operation, as operations associated with the completed path would include use by bicycles on-campus similar to the use of the existing path.

Summary

Because the projects incorporate LRDP Mitigations AIR-1, AIR-2 and AIR-6 and with the implementation of Recycling Yard Mitigation Measure AQ-1 as part of the Recycling Yard Project, all air quality impacts of the proposed projects would be less than significant.

[5] http://lrdp.ucsc.edu/MonitoringReports/MMP_2012-13.pdf

6.4 BIOLOGICAL RESOURCES

BIOLOGICAL RESOURCES Would the project…	Potentially Significant Impact	Project Impact Adequately Addressed in the LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☑	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☐	☑
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☐	☑
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☑	☐	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☐	☑
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☐	☑

Biological resources issues and programmatic mitigation measures applicable to LRDP development are described in Volume I, Section 4.4, of the 2005 LRDP EIR (UCSC 2006). The following, previously adopted LRDP EIR mitigations for potential impacts to biological resources are applicable to and included in the project (the full text of the mitigation measures is included in Appendix B):

LRDP EIR Mitigation BIO-2A (Avoid coastal prairie)

LRDP EIR Mitigation BIO-6 (Measures to avoid spread of pitch canker, noxious weeds, sudden oak death syndrome)

LRDP EIR Mitigation BIO-9 (Measures to protect California red-legged frog)

LRDP EIR Mitigation BIO-11 (preconstruction monitoring for and avoidance of nesting special-status birds)

LRDP EIR Mitigations BIO-12A and BIO-12B (Survey for and avoidance of burrowing owl)

LRDP EIR Mitigation BIO-14 (Survey for and avoidance of San Francisco dusky-footed woodrat)

a) A biotic assessment of the Recycling Yard site was conducted in 2001 as part of a study of several alternative sites for expansion of the CASFS Farm. The assessment included mapping of habitats and evaluation for the potential presence of special-status plant and wildlife species and sensitive habitats (Biotic Resources Group, 2001). An additional botanical survey was conducted on the Recycling Yard site in spring 2014 to identify the current locations of native grass stands mapped on the site in 2001 (Biotic Resources Group 2014), and the wildlife habitat assessment was updated in February 2015 (Biosearch Associates 2015). The botanical and wildlife habitat assessments for the proposed Projects are included in Appendix F. The biotic assessments found that the project site generally lacks suitable habitat for most special-status wildlife species known from the UC Santa Cruz campus and surrounding region, due to a combination of unsuitable habitat conditions and the high level of human activity in the area.

The site is dominated by grassland, with a large patch of coyote brush scrub and two stands of Monterey cypress at the southern end of the site. The grassland on the site is comprised predominantly of non-native grasses and forbs. Several patches of native grasses, including purple needlegrass (*Stipa pulchra*) are present in the understory of the coyote brush scrub and along the edge of the existing roadway in areas that are periodically mowed. No special-status plant species were identified in 2001, and none have been previously recorded on the site.

Several special-status wildlife species have the potential to occur on the site: California red-legged frog *(Rana draytonii)*; several special-status raptors, including golden eagle (*Aquila chryseatos*), white-tailed kite (*Elanus leucurus*) and northern harrier (*Circus cyaneus*); burrowing owl (*Athene cunicularia*); grasshopper sparrow (*Ammodramus savannarum*) and Belding's savannah sparrow (*Passerculus sandwichensis alaudinus*); San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*); and American badger (*Taxidea taxus*).

California Red-Legged Frog (CRLF). CRLF is listed as Threatened under the federal Endangered Species Act and as a Species of Concern by California Department of Fish and Wildlife (CDFW). Suitable breeding and movement habitat for California red-legged frog is present within the Moore Creek watershed along Moore Creek and its tributaries and in the Arboretum Pond. CRLF is known to breed in the Arboretum pond, approximately 0.2 mile from the project site, and have been found in the East Fork of Moore Creek, approximately 0.15 mile from the site. Red-legged frogs may also occur in marginal upland habitats adjacent to Moore Creek during juvenile dispersal or adult aestivation. During periods of wet weather, red-legged frogs may make overland excursions through upland habitat. Although no aquatic habitat is present on the Project site, frogs could potentially occur on the site, especially during the rainy season, while dispersing from the breeding site or moving between breeding and non-breeding aquatic habitats.

The 2005 LRDP EIR (Vol. 1, pp. 4.4-54 to 4.4-55) determined that some infill adjacent to Moore Creek drainage and storm drainage improvements in Moore Creek could adversely impact CRLF habitat and could result in potentially significant impacts to the species. Red-legged frogs may disperse into areas envisioned for future development in the campus core, however, this possibility is considered remote because red-legged frogs have not been documented on campus within developed areas or outside of the Moore Creek riparian corridor. No development is proposed in suitable breeding or high-quality movement habitat under the 2005 LRDP, as all areas in the Moore Creek watershed that provide suitable breeding habitat and movement habitat are designated Campus Natural Reserve, and Site Research and Support that limit development. Therefore, the 2005 LRDP could have a substantial adverse effect on the local or regional red-legged frog population, but the impact would be reduced to a less-than-significant level by the implementation of LRDP Mitigation BIO-9, which requires pre-construction monitoring, monitoring during construction and measures to exclude frogs from the construction site.

The proposed Recycling Yard and Bike Path Projects are outside the Moore Creek watershed, and there is no aquatic habitat on either site. However, the sites are within the area of upland habitat where CRLF may be found while dispersing from the breeding site or moving between breeding and non-breeding aquatic habitats. Construction activities could result in harm to individual frogs moving through the site, which would be a potentially significant impact. Although LRDP Mitigation BIO-9 applies to projects in the Moore Creek watershed, because of the proximity of the Recycling Yard and Bike Path Projects to Moore Creek, Recycling Yard Mitigation Measure BIO-1 would require that the Project implement LRDP Mitigation Measures BIO-9 to reduce the potential impact to CRLF to a less-than-significant level.

> **Recycling Yard Mitigation BIO-1*:*** The Campus shall implement LRDP Mitigation Measure BIO-9 during construction of the Recycling Yard and Bike Path projects.

Nesting Birds. There are several species of special-status raptors known to occur in the vicinity of the Project site, including golden eagle (Aquila chryseatos), white-tailed kite (*Elanus leucurus*) and northern harrier (*Circus cyaneus*), but none are expected to nest on the site itself due to a lack of nesting sites micro-habitat and the high level of human activity in the area. Marginal nesting habitat is present for the northern harrier on the grassland onsite, and the site provides suitable foraging habitat for raptors that nest in the vicinity. However, the species is not expected to nest due the regular level of disturbance during the nesting season.

Several special-status passerines are known from the lower campus area of UC Santa Cruz. Most of these species are not expected to nest onsite due to a lack of nesting sites and the high level of human activity in the area. However, potential nesting habitat is present onsite for two grassland species: grasshopper sparrow (*Ammodramus savannarum*) and Belding's savannah sparrow (*Passerculus sandwichensis alaudinus*). The biological survey report for the proposed Project recommends pre-construction surveys and avoidance measures to ensure that construction activities do not disturb active nests of these species. LRDP EIR Mitigation BIO-11, which requires pre-construction surveys for Projects that begin construction during the nesting season, and the establishment of buffers for active nests, is applicable to and incorporated into the Project. With implementation of this previously adopted mitigation measure, the impact to nesting birds would be less than significant.

Western Burrowing Owl. The burrowing owl (*Athene cunicularia*), a CDFW Species of Special Concern and USFWS Bird of Conservation Concern, winters on the lower UCSC campus. It has been observed at several locations nearby and an individual was seen ~1/4 mile north of the site on 17 January 2015 (eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available: http://www.ebird.org.). As noted in the 2001 assessment, the species has not nested on the UCSC campus since1987. Potential wintering habitat is present onsite, wherever California ground squirrels are present, including the proposed Recycling Yard site.

The 2005 LRDP EIR (Vol. 1, pp. 4.4-57 to 4.4-59 and Vol. 4, p. 3-13) determined that development under the 2005 LRDP, including approximately 98 acres of suitable grassland habitat, would not have a significant impact on the species because of the abundance of suitable habitat elsewhere on campus (approximately 369 acres) is proposed on approximately 98 acres of suitable grassland habitat. Removal of this unoccupied suitable habitat is considered a less-than-significant impact because of the abundance of suitable habitat elsewhere on campus (approximately 369 acres). However, the future construction proposed under the 2005 LRDP does have the potential to kill or injure western burrowing owls that occupy nests at a project site. Impacts to individuals in occupied nests would be considered potentially significant. Implementation LRDP Mitigations BIO-12A and BIO-12B, which require pre-construction survey and avoidance measures, would reduce development-related impacts to western burrowing owl to a less-than-significant level

The proposed Recycling Yard Project would develop approximately 3 acres of grassland in land that is designated Protected Landscape, and therefore not in the LRDP EIR analysis of impacts to burrowing owl habitat. However, the additional 3 acres of development would reduce the remaining grassland from approximately 369 acres to 366 acres, which is a minor reduction in habitat. Therefore, the Project would not result in a new significant impact on burrowing owl habitat that was not previously analyzed in the LRDP EIR. Construction activities at the site could kill or injure western burrowing owls that occupy nests at the Recycling Yard Project site. LRDP EIR Mitigations BIO-12A and BIO-12B are applicable to and incorporated in the Project. With implementation of these measures, the impact would be less than significant.

San Francisco dusky-footed woodrat. The San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) is designated as a Species of Special Concern by CDFW. It is present in suitable habitats throughout the lower campus area, including in Moore Creek to the east of the site. Marginal habitat for the species is present in the coyote brush and cypress trees in the southern part of the Recycling Yard site.

The 2005 LRDP EIR (Vol. 1, pp. 4.4-60 to 4.4-61) determined that construction activities in wooded areas, primarily in the north campus, under the 2005 LRDP could result in abandonment of active woodrat nests, which would be a significant impact. This would be a potentially significant impact, as development in the north campus could remove up to about a quarter of the nests in that area. Implementation of LRDP Mitigation BIO-14, which requires preconstruction surveys and relocation of active nests, would reduce the LRDP impact to a less-than-significant level.

As discussed above, there is marginal woodrat habitat in a portion of the Recycling Yard site. LRDP Mitigation BIO-14 is applicable to and incorporated in the Project. Therefore, if woodrat nests are present, they would be identified and relocated, and the impact would be less than significant.

American badger. The American badger (Taxidea taxus) is designated as a Species of Special Concern by the California Department of Fish and Game (CDFW). An American badger carcass was found in 2004 near the East Remote Parking Lot, approximately 0.3 miles to the NNE (CNDDB). The grassland onsite provides suitable habitat for this species.

The 2005 LRDP EIR (Vol 4, p. 3-14) determined that development under the 2005 LRDP would not have an impact on the American badger. At that time, the only recent known occurrence at UC Santa Cruz was the discovery of a single skull and partially attached neck tissues discovered near the East Remote parking lot in 2004, and the only documented occurrence of a living American badger in Santa Cruz County was 4 miles northwest of Santa Cruz in 1983. Thus, it appeared that the badger was, at most, an infrequent resident of or occasional migrant through the campus. More recently, it has been established that badgers are present near the campus, in Wilder Ranch State Park, which makes it appear more likely that badgers could occupy dens in suitable habitat on the campus, although a live badger has not been sited on the campus in more than 30 years. Implementation of Recycling Yard Mitigation BIO-2 would ensure that project construction does not disturb badgers, and reduce impacts to this species to a less-than-significant level.

> **Recycling Yard Mitigation BIO-2*:*** Prior to project construction, a qualified biologist shall inspect the project work area and adjacent areas within 100 feet for badger dens. If an active

badger den is found within the project footprint, CDFW will be contacted regarding the latest acceptable methods for den exclusion/excavation.

b,c) As described above, the 2001 biotic assessment identified native grasses, including purple needlegrass, on the Recycling Yard Project site, in the understory of the coyote brush scrub and along the edge of the existing roadway in areas that are periodically mowed. The proposed Recycling Yard Project has been designed to avoid impacts to these areas. Areas disturbed for the Bike Path Project site have been disturbed previously for construction of the bike path, the Village Road, underground utilities, and storm water drainage facilities. No other sensitive natural communities and no wetlands were identified on the Recycling Yard or Bike Path Project site.

d) As discussed above, under “a),” Project construction activities could disturb nests of passerine bird species. With implementation of LRDP EIR Mitigation BIO-11, this impact would be less than significant.

The 2005 LRDP EIR (Vol. 1, pp. 4.4-61 to 4.4-62) identified several wildlife corridors on the campus, including the grasslands of the lower campus, which provides a link between Pogonip City Park to the east and Wilder Ranch State Park to the west. The proposed Recycling Yard Project would develop a portion of the lower campus grasslands. However, the site is on the edge of the grassland with existing Farm and Arboretum fences forming barriers to wildlife movement on the south and east. The main expanse of the Great Meadow wildlife corridor would not be disrupted. The impact would be less than significant. The Bike Path Project would not create a new barrier to wildlife movement, and the conditions for wildlife movement across the bike path would remain the same after the Project’s construction.

e) The proposed projects are consistent with the policies of the 2005 LRDP with respect to biological resources. No other biological resources policies or ordinances are applicable. No impact would occur.

f) The proposed project sites are not within an area covered by any adopted Habitat Conservation Plan or other approved habitat conservation plan. No impact would occur.

<u>Summary</u>

Because the Recycling Yard and Bike Path Projects incorporate LRDP Mitigations BIO-2A, BIO-9, BIO-11, BIO-12-A, BIO-12B, and BIO-14, the projects would not result in significant impacts to coastal prairie, California red-legged frog, nesting special-status birds, overwintering western burrowing owl, or San Francisco dusky-footed woodrat. The projects could result in potentially significant impacts to American badger. Implementation of Recycling Yard Mitigation BIO-2 would reduce impacts to these species to a less than significant level. Consistent with LRDP Mitigation BIO-6, which is included in all campus construction contracts that involve ground disturbance, the Recycling Yard and Bike Path Projects would implement measures during construction to avoid the spread of noxious weeds.

6.5 CULTURAL RESOURCES

CULTURAL RESOURCES Would the project…	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☐	☐	☑

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☐	☐	☑	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☑	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☑	☐

Cultural resources issues and programmatic mitigation measures applicable to LRDP development are described in Volume I, Section 4.5, of the 2005 LRDP EIR (UCSC 2006). The following, previously adopted LRDP EIR mitigations for potential impacts to biological resources are applicable to and included in the project (the full text of the mitigation measures is included in Appendix B):

LRDP EIR Mitigation CULT-1A (archaeological records review of project site)

LRDP EIR Mitigation CULT-1B (training for construction crews on how to recognize archaeological sites and artifacts)

LRDP EIR Mitigation CULT-1C (archaeological survey during project planning and design)

LRDP EIR Mitigation CULT-1D (Measures to be taken if cultural resource is identified)

LRDP EIR Mitigation CULT-1G (measures to be taken if an archaeological resource is discovered during construction)

LRDP EIR Mitigation CULT-2B (requirement to determine the potential for a project to result in impacts to historical resources)

LRDP EIR Mitigation CULT-4C (measures to be taken in the event of a discover on campus of human bone, suspected human bone, or a burial)

LRDP EIR Mitigation CULT-5A (evaluation of whether a project site is underlain by a formation that is known to be sensitive for paleontological resources)

LRDP EIR Mitigation CULT-5C (measures to be taken in the event of a discovery of a paleontological resource on campus)

LRDP EIR Mitigation CULT-5D (measures to be taken in the event that a proposed project would result in impacts to a unique paleontological resource)

a,b,d) Consistent with LRDP mitigation CULT-1A and -2B, areas of potential effects (APE) for archaeological resources and for historic buildings and structures were defined for the project. For archaeological resources, the APE was defined to include all areas where native soils potentially could be disturbed (see Figure 3-2 for the limits of the Project). For historical built environment resources, the APE includes all buildings and structures that would be directly affected by development and from which the project site is visible.

A stone foundation, remnants of a barn structure that was demolished in 1960s or 1970s, is located on the ridge near the center of the Recycling Yard Project site. The Project would demolish this foundation. An archaeological investigation of the foundation and the surrounding area was conducted in spring 2014.

The investigation included background research, detailed mapping of the foundation and the surrounding site, and subsurface testing. The research included an interview with Les Strong, who worked at the Cowell Ranch from 1950-1962 and was the last foreman of the ranch, to inquire about the use of the structure that stood on the foundation. Mr. Strong recalled that the structure was called the Slaughterhouse Barn, and housed the cattle that had been selected from the herds on the ranch and housed there to await their fate in the nearby Slaughterhouse. In the later years of the ranch, when only a handful of men continued to live and work there, the Slaughterhouse Barn was used to wean the calves that were born on the nearby grassy, south-facing hillside to the north of the Project site.

According to Mr. Strong's recollections, the slaughterhouse barn was a single-story redwood structure, with a gabled roof oriented north/south, and a dirt floor. The foundation measured approximately 48 foot square, but Mr. Strong thought the barn was bigger than that. He said it had a wing on both the north and south sides that likely did not sit on the main, central, foundation. The foundation is composed of dry-laid angular marble cobbles and is approximately 10 in. wide with a maximum height of 18 in. A concrete cap on the south side may have been designed to help protect it from the rain storms coming off the ocean in that direction. Within the main, square foundation are 5 interior wall partition foundations. Two run east/west, dividing the interior into 3 portions, with the center being 22.5 feet wide and both ends being 12 feet wide. The center area is in turn divided by 3 more walls, making 4 compartments between 10 and 11 feet wide. These spaces may have been stalls. The front door faced east and a back door faced west (Strong, 2014 personal communication). A pipe brought water from a nearby spring to a livestock watering trough that is extant, approximately 120 ft. southwest of the barn site. The surrounding area was fenced and access was by a dirt road from the east. A review of historic aerial photos revealed that the structure was built prior to 1931 and was demolished between 1963 and 1968.

No buried artifacts were discovered during the subsurface investigation. The lack of occupational artifacts in and around the foundation makes it difficult to add new information to what is known about how the barn was used during its operational years. Isolated concrete pier blocks and a livestock watering trough to the southwest of the foundation are made with rough poured concrete and could have been handmade on site. While they are likely associated with the historic use of the barn, they are otherwise unremarkable. Metal pipe on the site most likely transported water in support of agricultural land uses. A tension rod found in the south portion of the foundation may have been used to correct minor sagging in the upper works of the former barn. Scattered milled lumber fragments found throughout the area around the foundation are likely remnants of the original structure.

The archaeological investigation report concludes that the historic foundation does not constitute a historic resource as defined in Section 15064.5 of the CEQA Guidelines. Several extant barns lie within the boundaries of the Cowell Lime Works Historic District that have been repurposed and well-maintained. The barn on the Recycling Yard site is limited to a remnant lime rock foundation with scattered milled lumber, along with a metal pipe and the tension rod. It is not a good representative example of this type of structure either within or associated with the historic district. The two concrete pier blocks are nondescript, and other examples of concrete livestock watering troughs are located on the campus. These nearby features do little to add to the site's limited importance. The data recovery that was completed during the investigation mitigates to a less-than-significant level, the impact resulting from removal of the foundation.

However, there a potential for finding artifacts related to the historic barn foundation in near-surface soils in areas not explored during the investigation. Given the proximity of the historic barn to the Slaughterhouse, which is associated with, although not within, the Cowell Lime Works District, there is a possibility that any such artifacts could be related to the former lime works industry. The Project would not disturb any known pre-historic archaeological or historic archaeological resources, and no new archaeological sites were discovered during the survey. However, the possibility for the discovery of unrecorded sites during Project construction exists, and the ground disturbing activities both within and adjacent to the Cowell Lime Works Historic district, other locations in the vicinity of historic lime industry activity, and other areas of archaeological sensitivity, may impact unknown buried cultural deposits, which would be a potentially significant impact. Implementation of previously adopted LRDP Mitigation Measures CULT-1A through CULT-1H, which are applicable to and included in the Project would reduce the impact to a less-than-significant level. These mitigations provide for contractor training, construction monitoring by a qualified archaeologist, data recovery, and other measures to avoid or mitigate for impacts to cultural resources discovered during construction. As recommended by the archaeological investigation report, archaeological monitoring would be required during initial disturbance of the top 2 feet of soil within 70 feet of the historic foundation and if archaeological resources are identified, LRDP Mitigation Measures CULT-1F, CULT-1G and CULT-1H will be implemented as warranted.

The Bike Path Project would be constructed in areas previously disturbed for construction of the bike path, Village Road, underground utilities, and storm water drainage facilities. Therefore, it is unlikely that archaeological resources would be encountered during construction and the impact would be less than significant. Archaeological monitoring is not required during construction of the Bike Path Project. However, LRDP Mitigation Measures CULT-1F through CULT-1H, which define procedures to be followed if archaeological resources are encountered during construction, are applicable to and incorporated in the Project.

c) Consistent with LRDP Mitigation CULT-5A, the campus consulted the most recent campus soils and geology map and determined that the project is sited on schist, which has low paleontological sensitivity. There are no known unique paleontological resources or geologic features on the project site. Consistent with LRDP Mitigation CULT-5C, construction contract specifications will include the requirement that in the event of a discovery of a paleontological resource on the project site, work within 50 feet of the find shall halt until a qualified paleontologist has examined and assessed the find and, if the resource is determined to be a unique paleontological resource, the resource is recovered. LRDP Mitigation CULT-5D is a component of the Project requiring that the Campus adequately document, analyze, and curate any finds at an appropriate institution. The project therefore would not result in a significant impact to paleontological resources.

Summary

The Recycling Yard and Bike Path projects incorporate previously adopted 2005 LRDP EIR Mitigations CULT-1A, CULT-1B, CULT-1C, CULT-1G; CULT-2B, CULT-4C, CULT-5A, CULT-5, and CULT-5D and therefore will result in less-than-significant cultural resources impacts.

6.6 GEOLOGY, SOILS, & SEISMICITY

GEOLOGY, SOILS, & SEISMICITY Would the project…	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:					
Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other	☐	☐	☐	☐	☑

GEOLOGY, SOILS, & SEISMICITY Would the project…	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.					
Strong seismic ground shaking?	☐	☐	☐	☑	☐
Seismic-related ground failure, including liquefaction?	☐	☐	☐	☑	☐
Landslides?	☐	☐	☐	☐	☑
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☑	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☑	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☑	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☐	☑

Geology, soils and seismicity background and issues, and programmatic mitigation measures applicable to LRDP development, are described in Volume I, Section 4.6, of the 2005 LRDP EIR (UCSC 2006). The following, previously adopted LRDP EIR mitigations for potential impacts to geological resources are applicable to and included in the project (the full text of the mitigation measures is included in Appendix B):

LRDP EIR Mitigation GEO-1 (preparation of geotechnical investigations for new development)

a,i) The UC Santa Cruz campus and the surrounding area are not located within an Alquist-Priolo Earthquake Fault Zone and no active faults are mapped on the campus (Nolan Zinn 2005). No impact would occur.

a,ii-v) The proposed project sites, like much of California, could experience significant seismic shaking. Consistent with LRDP Mitigation GEO-1, a geotechnical and geologic feasibility study has been prepared for the Recycling Yard Project (Pacific Crest Engineering 2014). The Material Recovery Facility would be designed and constructed in conformance with the California Building Code (CBC). Consistent with the University of California Seismic Safety Policy, nonstructural building elements such as furnishings, fixtures, material storage facilities, and utilities that could create a hazard if dislodged during an earthquake would be anchored for seismic resistance.

The geotechnical study for the Recycling Yard Project concluded that the liquefaction potential at the site is low, based on the type of soil encountered (Pacific Crest Engineering 2014). Potential hazards from landslides on campus are limited to areas where steep slopes are overlain by substantial thicknesses of colluvium and soil, generally only along the larger stream drainages and in the old marble quarries (Nolan Zinn 2005). The proposed Project does not involve construction on steep slopes. The project would not result in significant impacts related to seismic shaking or landslides. As discussed in the geotechnical feasibility study for the Project, structures built in accordance with the latest edition of the California Building Code, as required by University Policy, may experience relatively minor damage, which should be reparable. For these reasons, seismic shaking at the Recycling Yard site would not result in substantial adverse effects and the impact would be less than significant.

The Bike Path Project would not include construction on steep slopes and would not develop any new structures or other facilities whose failure related to seismic shaking could result in substantial adverse effects. The impact would be less than significant.

b) The potential for erosion related to construction activities and to new impervious surface is addressed in Section 6.9, below.

c) Much of the central and lower UC Santa Cruz campus is underlain by marble bedrock. Over many thousands of years, the dissolution of the marble by ground water has created an extensive system of solution cavities in the area. The solution cavities consist of highly irregular, interconnected caverns and channels. Where they intersect the ground surface, they form pits, called sinkholes or dolines, which may gradually fill by infiltration of fine-grained sediments from the surface or by collapse of the adjacent rock walls or roof into the cavity. At the ground surface, solution cavities may manifest in two ways. Collapse dolines, which are created by failure of the cavity roof, are typically steep-sided, while solution colines are created by surface and near surface soils eroding and washing into and through a cavity system, leaving a broad closed depression with moderate to gently sloped sites. The surface expression of many of the dolines on the campus has been almost completely obliterated by erosion and deposition. Subsurface manifestations of the solution cavity system may include zones of very loose or soft soils at depth, loose marble rubble, or highly weathered marble bedrock with open voids or cavities, loosely filled with residual soil.

The proposed Recycling Yard site is within one of the largest closed depressions on the Campus. The geology of the site is mapped as doline fill, with a small outcrop of marble bedrock located near the center of the proposed Material Recovery Facility (Nolan, Zinn 2005). The 2005 update of the Campus Geology map defined four karst hazard zones, based on the known or suspected presense of doline features. Areas underlain by doline fill have been designated as Hazard Level 4, indicating a high potential for hazards due to karst conditions. The proposed Recycling Yard lies almost entirely within Hazard Level 4. The geotechnical and geological feasibility study for the Project found that the site is underlain by doline fill and marble bedrock, mantled by soil from past doline collapses, colluvium, and possibly marine terrace deposits. The marble is cross cut by granitic igneous bedrock instructions. The doline fill consists predominantly of clay and silt with varying amounts of very fine to fine-grained sand and gravel. Soft soil layers approximately 2.5 to 5 feet thick were found above the marble bedrock in three of nine test borings. The marble outcrop is riddled with small voids, which is indicative of ongoing doline processes at the site (Pacific Crest Engineering 2014).

The geotechnical and geological feasibility study report concluded that the proposed Recycling Yard is an appropriate use of the site, as the proposed improvements are relatively minor and the Material Recovery Facility building would be lightly loaded. However, there is some inherent risk of damage to structural and/or hardscape, which should be addressed through a more detailed geotechnical investigation, including specific and detailed recommendations for foundation types and the geotechnical design values to be used, retaining structures as needed, drainage, and earthwork preparation. In addition, it is important to prevent the introduction of surface and near-surface water into the ground below developed areas, to avoid precipitating a doline fill subsidence event. Storm water management systems must be designed to prevent water from infiltrating into the soft soil zones and the marble bedrock (Pacific Crest Engineering 2014).

The 2005 LRDP EIR (Vol. 1, pp. 4.6-17 to 4.6-18) concluded that although construction in karst terrain is potentially hazardous because many karst features are not visible at the surface and settling or collapse can occur beneath a structure constructed on karst, campus construction practices have been successful in preventing settlement or collapse of structures. Therefore, implementation of 2005 LRDP Mitigation GEO-1, which requires characterization of project site conditions and implementation of the recommendations of the geotechnical investigation, would reduce the LRDP impact to a less-than-significant level.

Consistent with 2005 LRDP Mitigation GEO-1, which is incorporated into the Recycling Yard Project, a geotechnical feasibility study has been performed for the proposed project, and, following the recommendations of the feasibility study, a detailed study would be performed during design to identify the specific measures to be incorporated into project design and construction (Pacific Crest Engineering 2014). These measures would ensure that the Recycling Yard Project is designed and constructed to prevent damage to life or property. The impact would be less than significant with implementation of the previously adopted 2005 LRDP Mitigation GEO-1. No project-specific mitigation is required.

The Bike Path Project would not develop any new structures or other structural loads which could cause subsidence of soft soils overlying the marble. The impact would be less than significant.

d) The silt and clay soils overlying the marble bedrock at the site could be moderately to highly expansive, which can present problems for concrete slab-on-grade floor systems. This issue can be addressed either by removing the expansive soil to a depth of 3 to 4 feet below slabs and replacing it with non-expansive imported engineered fill, or by treating the native soils with quick lime. In addition, the contrast in loading behavior between expansive or soft clay materials and the marble bedrock could result in load-bearing conditions that are not uniform across the building site. This condition can also be addressed by a zone of redensified fill and/or chemically treated soil beneath the structural foundations (Pacific Crest Engineering 2014). Expansive soils shrink and swell as a result of moisture changes. This can cause heaving and cracking of concrete slabs, pavements, and structures founded on shallow foundations if they are inadequately designed for these conditions. Potential risk to life and property can result if buildings were constructed on expansive soils without appropriate design. These risks can be avoided through the use of engineering solutions such as replacement of expansive soils with fill, lime treatment of soils, or deepening of foundations.

The 2005 LRDP EIR (Vol. 1, p. 4.6-16) concluded that, with implementation of 2005 LRDP Mitigation GEO-1, in conjunction with Campus Standards Handbook and compliance with the CBC, construction of campus facilities on expansive soils under the 2005 LRDP would be a less-than-significant impact.

Consistent with 2005 LRDP Mitigation GEO-1, a geotechnical investigation has been conducted for the proposed Recycling Yard Project and its recommendations will be incorporated into project design and construction. These requirements will ensure that the project incorporates appropriate soil treatment and/or foundation design. Therefore, the impact would be less than significant and additional mitigation is not required.

The Bike Path Project would not develop any new structures or other facilities which could be affected by expansive soils in a way that would result in substantial risks to life or property. The impact would be less than significant.

e) The proposed Recycling Yard would be connected to the sanitary sewer and would not use septic tanks or alternative wastewater disposal systems. Use of the Bike Path Project would not generate any wastewater. No impact would occur.

Summary

The Recycling Yard Project incorporates previously adopted LRDP Mitigation GEO-1, and thus all impacts of the proposed project related to geology and soils would be less than significant. No additional mitigation is required. All impacts of the Bike Project related to geology and soils would be less than significant. LRDP Mitigation GEO-1 is not applicable to the Bike Path Project and no project mitigation is required.

6.7 GREENHOUSE GAS EMISSIONS

GREENHOUSE GAS EMISSIONS Would the project…	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less Than Significant with Project-level Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	☑	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☑	☐

The 2005 LRDP EIR was certified before the passage of Assembly Bill 32 (Global Warming Solutions Act of 2006) and therefore did not analyze greenhouse gas emissions (GHGs) or climate change. There are no previously adopted mitigation measures for climate change impacts that are applicable to the proposed projects. Operation of construction equipment and vehicle trips associated with project construction would result in emissions of GHGs. Recycling Yard operations would also involve the use of diesel-fueled equipment which would result in direct emissions of GHGs. The Recycling Yard Project would also install new equipment that would utilize electricity and thereby result in indirect GHG emissions associated with the production of electricity by PG&E.

6.7.1 Background

The accumulation of greenhouse gases (GHGs) in the atmosphere regulates the earth's temperature. Without the natural heat trapping effect of GHGs, Earth's surface would be about 34° C cooler (CalEPA 2006). However, emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. Carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O) are the GHGs that are emitted in the greatest quantities from human activities. Emissions of CO2 are largely by-products of fossil fuel combustion. CH4 results from fossil fuel combustion as well as off-gassing associated with agricultural practices and landfills. N2O is produced by microbial processes in soil and water, including those reactions that occur in fertilizers that contain nitrogen, fossil fuel combustion, and other chemical processes.

Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. According to the California Environmental Protection Agency's (CalEPA) 2010 Climate Action Team Biennial Report, potential impacts of climate change in California may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (CalEPA 2010). While these potential impacts identify the possible effects of climate change at a global and potentially statewide level, in general scientific modeling tools are currently unable to predict what impacts would occur locally with a similar degree of accuracy.

6.7.2 Regulatory Setting

In response to an increase in man-made GHG concentrations over the past 150 years, California has implemented AB 32, the "California Global Warming Solutions Act of 2006." AB 32 codifies the Statewide goal of reducing GHG emissions to 1990 levels by 2020 (essentially a 15 percent reduction below 2005 emission levels), and requires ARB to prepare a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 requires ARB to adopt regulations to require reporting and verification of statewide GHG emissions.

After completing a comprehensive review and update process, ARB approved a 1990 statewide GHG level and 2020 limit of 427 million metric tons (MMT) carbon dioxide equivalent (CO_2e). The Scoping Plan was approved by ARB on December 11, 2008, and includes measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. The Scoping Plan includes a range of GHG reduction actions that may include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms.

In May 2014, ARB approved the first update to the AB 32 Scoping Plan. The 2013 Scoping Plan update defines ARB's climate change priorities for the next five years and sets the groundwork to reach post-2020 goals set forth in EO S-3-05. The update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluates how to align the State's longer-term GHG reduction strategies with other State policy priorities, such as for water, waste, natural resources, clean energy and transportation, and land use (ARB 2014).

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an environmental issue that requires analysis in California Environmental Quality Act (CEQA) documents. In March 2010, the California Resources Agency (Resources Agency) adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted guidelines give lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts.

The University of California Policy on Sustainable Practices (issued 7/1/2004 and updated 11/18/2013) requires that each campus develop a long- term strategy for voluntarily meeting the State of California's goal for reducing greenhouse gas (GHG) emissions to 1990 levels by 2020, pursuant to the California Global Warming Solutions Act of 2006. As an intermediate target, each campus must pursue the goal of reducing GHG emissions to 2000 levels by 2014.[6] Additionally, UC President Janet Napolitano issued a directive in November 2015 for each campus to achieve carbon neutrality by 2025. Napolitano outlined four focus areas for achieving this aggressive goal: increasing the renewable portfolio standards for purchased electricity beyond the state requirements, investing in campus energy efficiency and renewables projects, systemwide procurement of natural gas and biogas, and management of environmental attributes.[7]

In October 2011, UCSC adopted a Climate Action Plan (CAP) with actionable policies and programs, particularly in the field of climate change and GHG reduction. The UCSC goals include a target reduction from 2007 levels of 13,600 MT CO2e by 2014 and 25,300 MT CO2e by 2020. As of calendar year 2014, the campus is on track to meet the interim targets specified in the Sustainable Practices Policy, although the 2014 greenhouse gas inventory has not been officially reported and third-party verified by The Climate Registry yet. Within the CAP, reduction strategies and programs include but are not limited to: green campus activities (energy efficiency and carbon reduction projects), installation of renewable energy generation facilities, improved bicycle infrastructure (including safety programs), and working with regional partners to address climate change mitigation. This Climate Action Plan will be revised in winter 2015. To prepare for the CAP update, the campus has just commenced a yearlong Climate & Energy Study that will include energy audits for over 2M SF of buildings, a renewable energy feasibility study, and development of a scenario analysis tool to assist with short and long-term carbon neutrality planning.

[6] http://policy.ucop.edu/doc/3100155/Sustainable%20Practices

[7] http://ucop.edu/sustainability/_files/carbon-neutrality2025.pdf

6.7.3 Impact Analysis

a) This analysis is based on the methodologies recommended by the California Air Pollution Control Officers Association [CAPCOA] (January 2008) *CEQA and Climate Change* white paper. The analysis focuses on CO_2, N_2O, and CH_4 as these are the GHG emissions that on-site development would generate in the largest quantities. Fluorinated gases, such as HFCs, PFCs, and SF_6, were also considered for the analysis. However, neither the proposed Recycling Yard Project nor the proposed Bike Path Project would include a significant quantity of fluorinated gases since fluorinated gases are primarily associated with industrial processes.

The significance of GHG emissions may be evaluated based on locally adopted quantitative thresholds, or consistency with a regional GHG reduction plan (such as a Climate Action Strategy). The MBUAPCD has not adopted GHG emissions thresholds to date. According to a 2013 informational report from Mike Gilroy, Deputy Air Pollution Control Officer to the District Board of Directors, MBUAPCD recommended a threshold of 10,000 metric tons (MT) CO_2e per year for stationary source projects and a threshold of 2,000 MT CO_2e per year for land-use projects, or compliance with an adopted GHG Reduction Plan/Climate Action Plan. MBUAPCD is currently evaluating a percentage-based threshold option (MBUAPCD 2013b). Percentage-based thresholds have been adopted by other agencies, including the Sacramento Metropolitan Air Quality Management District, which determined that a threshold of 1,100 MT CO_2e per year would ensure that 90 percent of GHG emissions generated by projects in the region would be reviewed (Sacramento Metropolitan Air Quality Management District 2014).

Prior to beginning the development of MBUAPCD thresholds, MBUAPCD recommended use of the adopted San Luis Obispo Air Pollution Control District (SLOAPCD) quantitative emissions threshold of 1,150 MT CO_2e per year for most land use projects. Since the MBUAPCD thresholds have been recommended but not yet adopted, the more conservative SLOAPCD threshold is the most appropriate for analysis of each of the proposed projects (MBUAPCD, pers. communication, February 6, 2015). Therefore, each of the projects' contribution to cumulative impacts related to GHG emissions and climate change would be considered cumulatively considerable if the individual project would produce more than 1,150 MT CO_2e per year.

The City of Santa Cruz has adopted a Climate Action Plan. Although the University, as a state entity, is not subject to local regulation, local standards are a subject of importance to the University in evaluating impacts. It is University policy to seek consistency with local plans and policies where feasible. Consistency with the City's Climate Action Plan is discussed in part b of this section.

<u>Recycling Yard</u>
Potential GHG emissions associated with the proposed Recycling Yard Project were estimated using the California Emissions Estimator Model (CalEEMod) version 2013.2.2. The emissions estimate is based on an equipment list provided for the project, which includes equipment for each phase of construction within Phase 1 and Phase 2. The emissions estimate is also based on an assumed number of hauling trips (approximately 35 trips per day during grading in Phase 1), which is generated by CalEEMod based on the construction schedule and activities.

The proposed Recycling Yard Project Phase 1 would not result in any new operational emissions, as it would shift existing operations to a new location but would not add any structures or new operational activities; therefore, only construction emissions are estimated for Phase 1. Phase 2 would generate new operational emissions, as well as emissions associated with construction. Emissions associated with construction of the new building, Project-related vehicle trips, and building operations (electricity, wastewater treatment, and water supply) were estimated using CalEEMod; direct emissions associated with the grinder and loader, and indirect emissions associated with electricity usage of the new baler and in-vessel composter were calculated separately. The CalEEMod results and separate calculations are presented in Appendix D. Table 6.7-1 shows the operational emissions associated with the Project and Table 6.7-2 shows total construction and operational emissions for each phase of the project.

Table 6.7-1
Estimated GHG Emissions from Recycling Yard Operations (Annual)

Direct (Diesel-Powered) Stationary Equipment	
Grinder	32 MT CO_2e per year
Loader	26 MT CO_2e per year
Trommel	26 MT CO_2e per year
Subtotal	*84 MT CO_2e per year*
Indirect (Electric-Powered) Stationary Equipment	
Baler	3 MT CO_2e per year
Composter	1 MT CO_2e per year
Vehicle Trips and Building Operation	75 MT CO_2e per year
Total Yearly Operational Emissions	**163 MT CO_2e per year**

Table 6.7-2
Estimated GHG Emissions from Recycling Yard Project

Total Estimated Construction Emissions for Phase 1 (2016)	137 MT CO_2e
Total Estimated Construction Emissions for Phase 2 (2017)	107 MT CO_2e
Total Estimated Operational Emissions (Annually after 2017)[1]	163 MT CO_2e
Maximum Yearly Emissions (Annually after 2017 + Construction[2])	*171 MT CO_2e*
Maximum Yearly Reduction in Operational Emissions (Hauling)	- 6 MT CO_2e
Maximum Yearly Reduction in Operational Emissions (Composting)	- 220 MT CO_2e
Total Maximum Yearly Operational Emissions	**- 143 MT CO_2e**
GHG Significance Threshold	1,150 MT CO_2e
Exceed Threshold	**No**

Estimated using CalEEMod version 2013.2.2
[1]This includes the stationary equipment described in Table 1
[2]Construction emissions amortized over 30 years (assumed life of the project)

As shown in Table 6.7-2, the annual GHG emissions that would result from project construction and operations, 171 MT CO_2e per year, are substantially lower than the threshold of significance of 1,150 MT CO_2e. The Recycling Yard Project would reduce the miles traveled for waste hauling truck trips from campus by approximately 3,500 miles per year. This would reduce annual GHG emissions by approximately 6 MT CO_2e (Appendix A).

Furthermore, composting of organic materials reduces GHG emissions by diverting discarded materials from landfills. The U.S. Environmental Protection Agency (EPA) has published estimates of the emission reduction potential of composting from between 0.20 and 0.42 MT CO_2e per ton of food scraps (EPA 2011). The proposed composting facility would process about 1,100 tons of organic material per year, which could reduce GHG emissions by between 220 and 462 MT per year. The more conservative estimate of 220 MT CO_2e is included in Table 6.7-2 above.

Based on the above calculations, Recycling Yard Project-related GHG emissions would result in a less than significant climate change impact.

Bike Path

The Bike Path does not include any operational emissions, as it would not generate any vehicle trips nor would it develop any structures or other features that would require energy. Therefore, the Bike Path Project would not result in any long-term (annual) emissions of GHGs. All emissions associated with the Bike Path Project would be associated with temporary construction activity. This includes grading, trenching, and paving, as well as approximately 26 hauling trips per day during site preparation and 4 trips per day during grading activities. These emissions would total approximately 114 metric tons of CO_2e, which is below the significance threshold of 1,150 MT CO_2e. Bike Path Project-related GHG emissions would result in a less than significant impact.

b) As discussed previously, AB 32 codifies the Statewide goal of reducing GHG emissions to 1990 levels by 2020 (essentially a 15 percent reduction below 2005 emission levels). CalEPA's Climate Action Team (CAT) published the 2006 CAT Report, which includes GHG emissions reduction strategies intended for projects emitting less than 10,000 tons CO_2E/year (CalEPA 2006). In addition, the California Attorney General's Office has developed Global Warming Measures (2010) and the State Office of Planning and Research's (OPR) 2008 technical advisory CEQA and Climate Change document includes GHG reduction measures intended to reduce GHG emissions in order to achieve statewide emissions reduction goals (ARB 2014). These measures aim to curb GHG emissions through suggestions pertaining to land use, transportation, renewable energy, and energy efficiency. Several of these actions are already required by California regulations, and the Recycling Yard Project and Bike Path Project would be required to comply with the regulations as applicable:

- *AB 1493 (Pavley) requires the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks.*
- *In 2004, the California Air Resources Board (ARB) adopted a measure to limit diesel-fueled commercial motor vehicle idling.*
- *The Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989) established a 50% waste diversion mandate for California*
- *Assembly Bill 341 (Chesbro, Chapter 476, Statutes of 2011) established a mandate to achieve even more significant waste reductions by 2020, setting a goal of 75 percent of the solid waste generated to be source reduced, recycled, or composted by 2020.*
- *Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and additions to and alterations to existing buildings).*
- *California's Renewable Portfolio Standard (RPS), established in 2002, requires that all load serving entities achieve a goal of 33 percent of retail electricity sales from renewable energy sources by 2020, within certain cost constraints.*
- *Green Building Executive Order, S-20-04 (CA 2004), sets a goal of reducing energy use in public and private buildings by 20 percent by the year 2015, as compared with 2003 levels.*

The proposed Recycling Yard Project would be consistent with AB 32, as it would reduce GHG emissions associated with campus-generated waste.

The City of Santa Cruz adopted a Climate Action Plan in June 2012. The Climate Action Plan includes the goal of becoming a zero waste city by 2030. The Climate Action Plan describes a strategy of creating program that would reduce organic waste from entering the landfill. The proposed Recycling Yard Project would increase composting on campus, thus reducing the compostable materials now going to the Santa Cruz City landfill, which is consistent with the City's goal of becoming a zero waste city by 2030.

The University of California Regents created a Sustainable Practices Policy in June 2004, which was most recently updated in August 2013 (UCSC 2013). This policy requires that each campus will complete a biennial update of its action plan for reducing emissions to 2000 levels by 2014, 1990 levels by 2020, and becoming climate neutral as soon as possible. UCSC's 2011 CAP includes strategies to reduce GHG emissions, such as green campus activities (energy efficiency and carbon reduction projects), improved bicycle infrastructure (including safety programs), and working with regional partners to address climate change mitigation. The proposed Recycling Yard Project would reduce GHG emission by increasing the amount of waste diverted from landfills through more effective sorting and through composting. Thus, the Recycling Yard Project implements CAP strategies pertaining to green campus activities. Further, the Bike Path Project is intended to increase safety on the Great Meadow Bike Path, which is consistent with CAP strategies related to improved bicycle infrastructure.

One of the goals of the UC Policy on Sustainable Practices is for each University of California (UC) campus to achieve "zero waste" by 2020. For the purposes of measuring compliance with UC's zero waste goal, UC locations need to meet or exceed 95 percent diversion of municipal solid waste. Currently, the Campus is sending 1,369 tons per year (TPY) of solid waste to the City of Santa Cruz Resource Recovery Facility (RRF) for disposal.

A lack of suitable space for sorting and storage of waste has resulted in the scattering of Campus material recovery facilities across the Campus. In addition to the challenges posed by the lack of suitable space, the Campus' commitment to reaching zero waste by the year 2020 is complicated by changing trends in the types of materials landfill operations accept. While organic material, including "post-consumer" food scraps, paper towels, and compostable ware, currently makes up 48 percent (by weight) of campus solid waste, regional material recovery facilities have changed their policies and will no longer accept any organic material other than the pre-consumer food waste that typically originates from kitchens and other food preparatory operations.

The proposed Recycling Yard Project would allow the Campus to compost the organic material that makes up 48 percent of the solid waste being generated. The project would also allow the Campus to more efficiently sort its solid waste and divert a higher percentage of it from landfills. The purpose of the Recycling Yard Project is to help the Campus to meet its zero waste goal.

Because the Recycling Yard Project and the Bike Path Project would not result in a net increase in vehicle trips, nor would either require a substantial amount of energy, both of which are contributors to GHG emissions and are most frequently addressed in plans, policies, and regulations, including those described above, the projects would not conflict with any California regulations intended to reduce GHG emissions. Furthermore, the Recycling Yard Project would result in a decrease in GHG emissions associated with off-site hauling truck trips and landfills, as it would increase the amount of organic material composted. Therefore, the projects would not conflict with any applicable plan, policy or regulation intended to reduce GHG emissions, and the impact would be less than significant.

<u>Summary</u>

All GHG impacts of the proposed projects would be less than significant. No mitigation is required.

6.8 HAZARDS AND HAZARDOUS MATERIALS

HAZARDS & HAZARDOUS MATERIALS Would the project…	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☑	☐

HAZARDS & HAZARDOUS MATERIALS Would the project…	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☑	☑
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☐	☑
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☐	☑
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☐	☑
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☐	☑
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☑	☐

Hazards and hazardous materials issues and programmatic mitigation measures applicable to LRDP development are described in Volume I, Section 4.7, of the 2005 LRDP EIR (UCSC 2006b). The following, previously adopted LRDP EIR mitigations for potential impacts related to hazards and hazardous materials are applicable to and included in the project (the full text of the mitigation measures is included in Appendix B):

LRDP EIR Mitigation HAZ-9A (construction traffic control and roadway closure notification requirements for contractors)

a) Like any other construction activities, construction of the proposed project could involve use of hazardous chemicals, such as petroleum products and solvents associated with the use of heavy construction equipment. Any such materials would be handled and disposed of in compliance with state and federal laws regulating hazardous waste. Campus Standards provide specific requirements for hazardous materials spill prevention, reporting and response. These requirements would minimize the potential for hazards to the public or to the environment as a result of a release of hazardous materials and the impact would be less than significant.

b,c) Operation of the Recycling Yard Project would involve the use of diesel fueled equipment and other chemicals required for routine maintenance of equipment. would not be used in at the Recycling Yard. Any such materials would be handled and disposed of in compliance with state and federal laws regulating hazardous waste. Campus Standards provide specific requirements for hazardous materials spill prevention, reporting and response. These requirements would minimize the potential for hazards to the public or to the environment as a result of a release of hazardous materials and the impact would be less than significant.

d) There are no sites on campus that are listed as hazardous-materials sites pursuant to Government Code Section 65962.5. Past uses of the campus, including the proposed project site, are well known, and are not likely to have resulted in soil or groundwater contamination. No impact would occur.

e,f) There are no public airports or private airstrips in the vicinity of the UC Santa Cruz campus. No impact would occur with respect to air traffic hazards.

g) Construction of the proposed projects could necessitate temporary closure of the Bike Path and a portion of Village Road. Consistent with LRDP Mitigation HAZ-9A, the proposed project would therefore be required to comply with standard Campus contract provisions that include: (1) Construction must be conducted in a manner that minimizes the obstruction to traffic; (2) Contractors are required to provide advance notification of proposed road closures to the campus community and to emergency services providers; (3) Alternate access routes must be clearly designated; (4) Adequate access to fire hydrants and for the passage of emergency vehicles must be maintained, and campus police and fire departments and dispatchers must be notified of proposed road closures and alternative travel routes for emergency vehicles; (5) Handicapped-accessible and emergency exit routes from occupied buildings must be maintained at all times. The proposed project will comply with these and all other relevant Campus Standards. The project's potential to interfere with to emergency operations therefore would be less than significant.

h) Although there is some risk of wildfire in undeveloped areas of the central and lower campus, including the Project site, Campus fire management procedures have been successful in preventing and controlling fires on campus in the past decade. The proposed project would not it interfere with Campus fire management or otherwise exacerbate the existing hazard. Therefore, the project's potential to result in increased risk of wildfire would be less than significant.

Summary

Because LRDP Mitigation HAZ-9A would be implemented during construction and occupation of the project, all impacts of the Recycling Yard and Bike Path Projects related to hazards and hazardous materials would be less than significant.

6.9 HYDROLOGY & WATER QUALITY

HYDROLOGY & WATER QUALITY Would the project…	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☐	☑
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☐	☑
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☑	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☐	☑
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☑	☐
f) Otherwise substantially degrade water quality?	☐	☐	☐	☐	☑
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☐	☑
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☐	☑
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☐	☑
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☐	☑

Hydrology and water quality background for the campus, and issues and programmatic mitigation measures applicable to LRDP development, are described in Volume II, Section 4.8, of the 2005 LRDP EIR (UCSC 2006b). The following, previously adopted LRDP EIR mitigations for potential impacts to hydrologic resources and water quality are applicable to and included in the project (the full text of the mitigation measures is included in Appendix B):

LRDP EIR Mitigation HYD-2B (erosion and sediment control measures for hillside grading)

LRDP EIR Mitigation HYD-3C (storm water runoff flow rate requirements for projects that create new impervious surface)

LRDP EIR Mitigation HYD-3D (storm water runoff volume control requirements for new capital projects)

LRDP EIR Mitigation HYD-3E (Pathways and bikeways to include fencing, signs to control bike/pedestrian circulation)

The Recycling Yard Project would result in approximately 3.0 acres of new impervious surface. The existing bike path is asphalt. The Bike Path Project would result in 330 sf of new impervious surface.

The southern two-thirds of the campus, including the Project sites, consists of marble and schist bedrock overlain by deposits of residual soils and colluvium. Karst topography has developed as a result of the dissolution of marble. Although this portion of the campus is cut by several steep-walled north-south flowing streams, an integrated drainage system is not present because of sporadic stream capture by sinkholes and swallow holes. As a result, very little storm water is conveyed by surface streams to channels downstream of the campus. Instead, storm water is captured by the karst aquifer, stored and transmitted via solution channels and caves, and discharged in springs at lower elevations to the east, south and west of the campus. The Recycling Yard Project site is in the Jordan Gulch watershed, which encompasses the central portion of the central and lower campus. All runoff in this watershed infiltrates to the subsurface and none leaves the campus as surface flow. The Recycling Yard site is within a closed depression within the Jordan Gulch watershed; the site slopes toward the south, toward three smaller depressions just to the north of the site, still within the larger closed depression. A portion of the Bike Path Project site slopes toward this closed depression; the remainder drains toward Jordan Gulch, which terminates at a sinkhole approximately 1,800 feet downstream of the intersection.

Runoff from the Bike Path Project would continue to drain to Jordan Gulch and the closed depression to the west.

Because the Recycling Yard Project would construct more than 15,000 sf of new impervious surface, Project design and construction must comply with the elements of the Campus' Post-Construction Storm Water Management Requirements listed below. The Campus developed these requirements, included in Appendix C of the Campus Standards, to comply with the State Water Resources Control Board General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s):

- Performance Requirement No. 1: Site Design and Runoff Reduction (design strategies to limit disturbance of natural drainage features and compaction of highly permeable soils, to minimize impervious surfaces and storm water runoff). To document compliance with this requirement, the Campus requires completion of a Post Construction Storm Water Management Checklist.
- Performance Requirement No. 2: Water Quality Treatment (design storm water management systems to treat storm water runoff to specific performance standards using, in order of preference, low impact development treatment systems, biofiltration treatment systems, or non-retention based treatment systems). To document compliance with this requirement, the Project design team must provide documentation, including calculations, in a Storm Water Control Plan. If a biofiltration system is used, it must be designed to a storm with at least 0.2 inches per hour intensity or two times the 85th percentile hourly rainfall intensity for the applicable area. If non-retention-based treatment systems are used, the following performance standards apply. Flow-based systems must be designed to treat storm water runoff equal to the volume of runoff generated by the 85th percentile 24-hour storm event. Systems based on flow capacity must be

sized to treat runoff from a storm with at least 0.2 inches per hour intensity or two times the 85^{th} percentile hourly rainfall intensity for the applicable area.

- Performance Requirement No. 3: Runoff Retention (runoff retention requirements which vary by location, but, for the Recycling Yard Project, include stipulation that post-project runoff volumes shall not exceed pre-project runoff volumes for the 2, 5, and 10-year storms). Compliance with this requirement must also be documented in the Storm Water Control Plan.
- Performance Requirement No. 4: Peak Management (storm water drainage design must not cause excessive erosion, and post-development peak flows discharged from the site shall not exceed pre-project peak flows for the 2- through 10-year storm events.

To comply with these requirements, runoff from the Recycling Yard Project site would drain toward three vegetated storm water treatment areas, on the northern, eastern, and western edges of the site. The size, soils and vegetation in these areas would be designed to meet the Campus' Performance Standard 2. If the results of the analysis required to comply with the Campus Standards indicate that the vegetated areas do not meet the performance standards for water quality treatment, mechanical treatment elements such as sediment traps or filters could also be used to meet the performance standards. All runoff from the Recycling Yard site would infiltrate to the subsurface, either on the site or in adjacent meadow areas.

a-f)
<u>Short-Term Construction Water Quality</u>
Ground disturbance and grading has the potential to result in water quality impacts during construction. The proposed Projects would involve grading for the new yard and the bike path, and excavation for foundation for the new Material Recovery Facility building. Overall, the Recycling Yard Project would result in approximately 6.1 acres of ground disturbance on site and 0.084 acre of disturbance for new utility connections. The Bike Path Project would involve grading of approximately 1.2 acres. As required for all construction contracts that would disturb more than 1 acre of soil, project construction contract documents would require the project contractor to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) to comply with the State Water Resources Control Board general permit for construction activities. The SWPPP identifies potential sources of pollution and describes runoff controls that will be implemented both during construction and after the building is complete to avoid impacts to water quality. The contractor would also be required to implement erosion and sediment control measures for hillside grading during the rainy season, as specified in LRDP Mitigation HYD-2B. Because the project would be subject to these requirements, the potential short-term construction water quality impacts of the project would be less than significant.

<u>Long-Term Operational Water Quality</u>
The Bike Path Project would not add any new sources of water pollutants and therefore would not result in long-term operational impacts on water quality.

Storm water runoff from the Recycling Yard Project site would infiltrate to the subsurface on-site; therefore, the Project would not result in storm water discharges to Waters of the U.S. or any other surface water body, and NPDES waste discharge requirements would not apply.

The Recycling Yard site is within a large closed depression with a marble bedrock ridge running east-west within the depression. This topography, as well as the results of the geotechnical feasibility study for the Project, are indicative of karst processes. In this type of setting, sinkholes and fractures in the marble may serve as direct conduits to groundwater, so infiltration of untreated stormwater on site could result in contamination of the karst aquifer underlying the central and lower campus. Activities outside the Material Recovery Facility, could include sorting and storage of construction and demolition waste, bin and equipment storage; green waste chipping and storage, compost screening, curing windrows, and vermiculture windrows, and truck and equipment parking. These activities could result in contamination of storm water with heavy metals, organic chemicals (oil, gasoline and grease), nutrients (nitrogen and phosphorus), pathogens (bacteria and protozoa), and sediment. To a certain extent, storm water contamination would be prevented by design features such as preventing runoff from flowing into storage areas using grading and berms, grading storage areas to direct flow toward an inlet with a shut-off valve or a dead-end sump. Operational procedures such as covering stored materials when rain is predicted would also help to prevent storm water contamination. However, treatment of potentially contaminated runoff would also be necessary to ensure that runoff infiltrated into the ground does not contaminate groundwater.

The geotechnical feasibility study for the proposed Recycling Yard Project assessed the suitability of the site for disposal of storm water. The study included a percolation test at one of the three proposed storm water treatment areas. The results of the test indicate that the transmissivity of the soils at that location are low (i.e., the soil drains slowly). The study concludes that infiltration of runoff is a viable geological option for the site because of the presence of the slowly draining soils. In a karst setting such as the Project site, if the runoff were discharged to surficial soils that drain rapidly, there is a potential that the travel time through the soil would not provide for contaminant removal, and contaminants could reach the karst aquifer. Rapid infiltration could also increase the potential for the runoff to trigger a soil collapse.

Compliance with the Campus' Post-Construction Storm Water Management Requirements, which include detailed documentation that the sizing and design of the storm water management system meet each performance requirement, would ensure that adequate treatment of runoff is provided in the storm water treatment areas or mechanically before it infiltrates to the subsurface soils. The Campus enforces these standards in order to comply with the State Water Resources Control Board General Permit; therefore, compliance with these requirements is mandatory. Therefore, the Project would not result in contamination of the karst aquifer and no mitigation is required.

The Recycling Yard Project would discharge wastewater from the Material Recovery Facility to the Campus sanitary system, which flows to the Santa Cruz Waste Water Treatment Facility. Wastewater from the facility would include domestic wastewater from the restroom, and flows from inside the Material Recovery Facility building, including water used to wash the composting vessel and other equipment. The Campus anticipates that City of Santa Cruz wastewater permit requirements would include pretreatment to remove solids, using screens and a sump before discharge of this water to the sanitary sewer, and exclusion of rainwater from the sanitary sewer. The measures would be incorporated into the Project design if required. Therefore, the discharges would not result in any violation of water quality standards or waste discharge requirements and the impact would be less than significant.

b) Runoff from the Project sites infiltrates into the ground and contributes to recharge of the karst aquifer underlying the Campus. The aquifer feeds a series of seeps and springs surrounding the lower portion of the campus, and is considered a potential supplemental, non-potable water supply for the Campus. The Project would be served by the Santa Cruz Water Department, and would not use local groundwater. Storm water runoff from the Recycling Yard site would infiltrate on-site or in adjacent meadow areas; therefore, the Recycling Yard Project would not result in a reduction in recharge to the karst aquifer. Runoff from the Bike Path would continue to flow to Jordan Gulch, where it would also be captured by the karst aquifer. No impact would occur.

c,d,e,f) LRDP Mitigations HYD-3C and HYD-3D are applicable to and incorporated into the proposed Projects. These mitigations require that post-development storm water runoff peak flow rates not exceed pre-development rates, and that every development project include design measures to maximize infiltration and dissipation of runoff near its source. The Campus implements these mitigations are implemented through the Post-Construction Storm Water Management Requirements, summarized above, under "Long-Term Operational Water Quality." The Recycling Yard Project would comply with these requirements by directing runoff to vegetated storm water treatment areas, and infiltration of treated runoff on the site or in adjacent meadow areas. Compliance with the Campus requirements, which include documentation that runoff is treated to specified performance standards and that post-construction peak flow rates and runoff volumes not exceed pre-construction levels would ensure that the Project would not result in erosion or siltation or flooding or degrade water quality.

g-j) The proposed projects have no potential to result in impacts with respect to 100-year flood hazard areas, dam or levee failure, or inundation by seiche, tsunami, or mudflow. The project site is not within a 100-year flood hazard area and is outside the inundation hazard area that could be affected by a failure of levees or dams, including Newell Creek Dam. The main campus is not in an area subject to inundation by seiche, tsunami, or mudflow. The project would not result in impacts related to any of these hazards.

Summary

LRDP Mitigations HYD-2B, HYD-3C and HYD-3D are applicable to and incorporated into the Recycling Yard and Bike Path Projects. Accordingly, the Projects would result in less-than-significant impacts related to hydrology and water quality and no project specific mitigation is required.

6.10 LAND USE & PLANNING

LAND USE & PLANNING Would the project…	Potentially Significant Impact	Project Impact Adequately Analyzed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☐	☑
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☐	☑
d) Result in development of land uses that are substantially incompatible with existing adjacent land uses or with planned uses?	☐	☐	☐	☑	☐

Land use background and issues relevant to LRDP development are described in Volume II, Section 4.9, of the 2005 LRDP EIR (UCSC 2006b).

a) The Recycling Yard Project site is on undeveloped land adjacent to the CASFS Farm on the south and undeveloped meadow on other sides. The Bike Path Project would be confined to the immediate area of the existing bike path and intersection. The Projects would not divide an established community and no impact would occur.

b) The applicable land use plan for the campus is UCSC's 2005 Long Range Development Plan (2005 LRDP). The Bike Path Project would alter the alignment of a portion of the Bike Path within land designated Protected Landscape (PL) and Site Research and Support (SRS). The bike path is consistent with both of these designations; therefore, no impact would occur.

Approximately 3.2 acres of the Recycling Yard Project site is on land designated SRS, and approximately 2.9 acres of the site is designated PL. The proposed recycling yard is not consistent with either of these land use designations. A minor LRDP amendment to change the land use designation of 3.7 acres of the site to Campus Support would be required. This would include 1.6 acre of PL lands and 2.1 acres of SRS lands. The remainder of the 6.1 acre site would be used for a new access road and storm water detention areas, which are consistent with the PL and SRS land use designations. The Campus Support land use designation accommodates a wide variety of uses that support the Campus' mission of education, research, and public service, including facility operations, maintenance, and infrastructure; and student services such as commercial and retail functions and facilities and the student health center.

The 2005 LRDP designates approximately 503 acres as PL, including most of the meadows south of the developed campus core, and corridors along Moore Creek and Jordan Gulch, which are preserved to support wildlife movement and to protect special plant species. Development within the PL designation may not impinge on the protected landscape's overall character. Only limited development such as pedestrian and bicycle paths, utilities, and service roads, and agricultural research that maintains the visual quality of the lower meadows is allowed in these areas.

The SRS land use designation applies to lands used by the CASFS and the Arboretum in the southern campus, including the proposed Recycling Yard site, the 3-acre Chadwick Garden at the east end of McLaughlin Drive in the central campus, and 33 acres in the northwest corner of the campus where there is no existing or proposed development. No specific new use of the land designated SRS on the Recycling Yard site was envisioned in the 2005 LRDP.

The visual impact of the proposed Project is analyzed in Section 6.1, Aesthetics, above. These impacts would be less than significant with implementation of previously adopted LRDP EIR mitigations and project specific mitigation Recycling Yard Mitigation AES-1.

The change in the land use designation to Campus Support would allow the development of the Recycling Yard, which would be an industrial facility. If not appropriately designed and managed, this facility could generate noise and odors which would be incompatible with the adjacent residential and academic uses, and could attract rodents. The potential noise and odor impacts of the Recycling Project are analyzed in Sections 6.3 and 6.10 (*Air Quality* and *Land Use and Planning*), respectively. As described in those sections, the noise and odor impacts of the Recycling Yard Project on the residents of the temporary apprentice housing and the residential and academic uses of the Village would be less than significant with implementation of previously adopted LRDP EIR and project-specific mitigation measures.

c) Neither the Bike Path Project site nor the Recycling Yard Project site is within the purview of any habitat conservation plan or natural community conservation plan, nor would the proposed activity or development affect any area so designated, directly or indirectly. Therefore, no impact would occur.

d) The Bike Path Project would not change existing land uses and no impact would occur.

Land uses surrounding the proposed Recycling Yard site are: the CASFS Farm to the south and east, including the apprentice cabins along the northern edge of the Farm; the UCSC Arboretum to the west; and meadow lands designated Protected Landscape to the north. The Village, a student housing complex, is located about 250 feet to the northeast; the two Village buildings nearest to the Recycling Yard are used as offices and a classroom for CASFS and the Program in Community and Agroecology (PICA), which is, an undergraduate living-learning program based at the Village. The composting operations proposed for Phase 2 of the Recycling Yard Project may provide some educational opportunities for CASFS and PICA, and, if it is certified for organic farming, these entities could use some of the compost. As discussed above, under item “b),” with implementation of mitigation measures identified in this Initial Study, the Recycling Yard Project would not involve uses which are substantially incompatible with the existing uses on the adjacent Farm. Therefore, the impact would be less than significant.

Summary

The proposed Recycling Yard and Bike Path Projects would not result in significant impacts related to land use.

6.11 MINERAL RESOURCES

MINERAL RESOURCES Would the project…	Potentially Significant Impact	Project Impact Adequately Analyzed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☐	☑
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☐	☑

a,b) The campus is within a Zone 3 Mineral Resource Zone, according to California Geologic Survey (CGS) maps. The CGS does not consider development in a Zone 3 area as a significant impact to mineral resources under CEQA (Hill 1997). The project site is not within an area designated as a mineral resource on city or county planning maps. Therefore, the proposed project would not result in any mineral resources impacts.

6.12 NOISE

NOISE Would the project result in…	Potentially Significant Impact	Project Impact Adequately Analyzed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☑	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☑	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☑	☐	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☑	☐

Noise issues and programmatic mitigation measures applicable to LRDP development are described in Volume II, Section 4.10, of the 2005 LRDP EIR (UCSC 2006). The following, previously adopted LRDP EIR mitigations for potential noise impacts are applicable to and included in the Recycling Yard and Bike Path Projects (the full text of the mitigation measures is included in Appendix B):

LRDP EIR Mitigation NOIS-1 (construction noise mitigation requirements)

LRDP EIR Mitigation NOIS-2 (requirement that contractor truck trips use only City-designated truck routes)

6.12.1 Background

Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz).

Sound pressure level is measured on a logarithmic scale with the 0 dB level based on the lowest detectable sound pressure level that people can perceive (an audible sound that is not zero sound pressure level). Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase of 3 dBA, and a sound that is 10 dBA less than the ambient sound level has no effect on ambient noise. Because of the nature of the human ear, a sound must be about 10 dBA greater than the reference sound to be judged as twice as loud. In general, a 3 dBA change in community noise levels is noticeable, while 1-2 dB changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40-50 dBA, while arterial streets are in the 50-60+ dBA range. Normal conversational levels are in the 60-65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations.

Noise levels typically attenuate (or drop off) at a rate of 6 dBA per doubling of distance from point sources (such as industrial machinery). Noise from lightly traveled roads typically attenuates at a rate of about 4.5 dBA per doubling of distance. Noise from heavily traveled roads typically attenuates at about 3 dBA per doubling of distance. Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA. The manner in which older homes in California were constructed (approximately 30 years old or older) generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows. The exterior-to-interior reduction of newer residential units and office buildings is generally 30 dBA or more (FTA 2006).

In addition to the actual instantaneous measurement of sound levels, the duration of sound is important since sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (Leq). The Leq is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). Typically, Leq is summed over a one-hour period. Lmax is the highest RMS (root mean squared) sound pressure level within the measurement period, and Lmin is the lowest RMS sound pressure level within the measurement period.

The time period in which noise occurs is also important since noise that occurs at night tends to be more disturbing than that which occurs during the day. Community noise is usually measured using Day-Night Average Level (Ldn), which is the 24-hour average noise level with a 10-dBA penalty for noise occurring during nighttime (10 p.m. to 7 a.m.) hours, or Community Noise Equivalent Level (CNEL), which is the 24-hour average noise level with a 5 dBA penalty for noise occurring from 7 p.m. to 10 p.m. and a 10 dBA penalty for noise occurring from 10 p.m. to 7 a.m. Noise levels described by Ldn and CNEL usually do not differ by more than 1 dB.

6.12.2 Regulatory Setting

Federal. Among other guidance, the Noise Control Act of 1972 directs the EPA to develop noise level guidelines that would protect the population from the adverse effects of environmental noise. The EPA published a guideline (EPA 1974) that contains recommendations of 55 dBA Ldn outdoors and 45 dBA Ldn indoors as a goal for residential land uses. The agency is careful to stress that the recommendations contain a factor of safety and do not consider technical or economic feasibility issues, and therefore should not be constructed as standards or regulations.

The Department of Housing and Urban Development (HUD) standards define Ldn levels below 65 dBA outdoors as acceptable for residential use. Outdoor levels up to 75 dBA Ldn may be made acceptable through the use of insulation in buildings.

State. The pertinent California regulations are contained in the California Code of Regulations (CCR). Title 24 “Noise Insulation Standards” establish the acceptable interior environmental noise level (45 dBA Ldn) for multi-family dwellings (that may be extended by local legislative action to include single-family dwellings). CCR Section 65302(f) establishes the requirement that local land use planning jurisdictions prepare a General Plan. The Noise Element is a mandatory component of the General Plan. It may include general community noise guidelines for noise/land use compatibility developed by the local jurisdiction. The state guidelines also recommend that the local jurisdiction consider adopting a local nuisance noise control ordinance. The California Department of Health Services has developed guidelines (1987) for community noise acceptability with which given uses are compatible for planning use by local agencies. For these purposes, selected relevant noise level guidelines include:

- CNEL[8] below 60 dBA – normally acceptable for low-density residential use
- CNEL of 55 to 70 dBA – conditionally acceptable for low-density residential use
- CNEL below 65 dBA – normally acceptable for high-density residential use
- CNEL of 60 to 70 dBA – conditionally acceptable for high-density residential, transient lodging, churches, and education and medical facilities
- CNEL below 70 dBA – normally acceptable for playgrounds and neighborhood parks.

[8] L_{dn} may be considered nearly equal to CNEL.

“Normally acceptable” noise levels are defined as levels satisfactory for the specified land use, assuming that conventional construction is used in buildings. “Conditionally acceptable” noise levels may require some additional noise attenuation or special study. Note that, under most of these land use categories, overlapping ranges of acceptability and unacceptability are presented, leaving some ambiguity in areas where noise levels fall within the overlapping range.

The State of California additionally regulates the noise emission levels of licensed motor vehicles traveling on public thoroughfares, sets noise emission limits for certain off-road vehicles and watercraft, and sets required sound levels for light-rail transit vehicle warning signals. The extensive state regulations pertaining to work noise exposure are for the most part applicable only to the construction phase of any project (for example California Occupational Safety and Health Administration Occupational Noise Exposure Regulations [8 CCR, General Industrial Safety Orders, Article 106, Control of Noise Exposure, Section 5095, et seq.]) or for workers in a “central plant” or a maintenance facility, or involved in the use of landscape maintenance equipment or heavy machinery.

Local. Although the University, as a state entity, is not subject to local regulation, local standards are a subject of importance to the University in evaluating impacts. It is University policy to seek consistency with local plans and policies where feasible. The State of California Governor’s Office of Planning and Research (OPR) has developed specific planning guidelines for noise/land use compatibility, which have been adopted by the City of Santa Cruz in the Noise Element of its General Plan (1994). The standards are shown in Table N-1.

Table 6.12-1
City of Santa Cruz Acceptable Noise Levels for Land Use Categories

Land Use Category	Levels of Acceptability[a], Ldn[b] or CNEL[c] (dBA)[d]			
	Normally Acceptable	**Conditionally Acceptable**	**Normally Unacceptable**	**Clearly Unacceptable**
Residential – Low Density Single Family, Duplex, Mobile Homes	Less than 60	55 to 70	70 to 75	More than 75
Residential – Multi Family	Less than 65	60 to 70	70 to 75	More than 75
Transient Lodging – Motels, Hotels	Less than 65	60 to 70	70 to 80	More than 80
Schools, Libraries, Churches, Hospitals, Nursing Homes	Less than 70	60 to 70	70 to 80	More than 80
Auditoriums, Concert Halls, Amphitheaters	-	Less than 70	-	More than 65
Sports Arena, Outdoor Spectator Sports	-	Less than 75	-	More than 70
Playgrounds, Neighborhood Parks	Less than 70	-	67 to 75	More than 73
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Less than 75	-	70 to 80	More than 80
Office Buildings, Business Commercial and Professional	Less than 70	68 to 73	More than 75	-

Table 6.12-1
City of Santa Cruz Acceptable Noise Levels for Land Use Categories

Land Use Category	Levels of Acceptability[a], Ldn[b] or CNEL[c] (dBA)[d]			
	Normally Acceptable	**Conditionally Acceptable**	**Normally Unacceptable**	**Clearly Unacceptable**
Industrial, Manufacturing, Utilities, Agriculture	Less than 75	70 to 80	More than 75	-

Source: Governor's Office of Planning and Research
Notes:

a) Levels of Acceptability are defined as follows:

Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional constructs without any special insulation requirements.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Normally Unacceptable: New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable: New construction or development clearly should be not undertaken.

b) Day-Night Level (DNL) is a descriptor of the community noise environment that represents the energy average of the A-weighted sound levels occurring during a 24-hour period, and that accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10:00 PM and 7:00 AM is weighted (penalized) by adding 10 dBA to take into account the greater annoyance of nighttime noises.

c) Community Noise Equivalent Level (CNEL) is the average A-weighted noise level during a 24-hour day, obtained by addition of 5 decibels in the evening from 7:00 to 10:00 PM, and an addition of a 10 decibels penalty in the night between 10:00 PM and 7:00 AM.

d) dBA is the decibel scale adjusted for audibility (A-weighted).

In low-density residential uses, normally acceptable existing exterior noise levels are those below 60 dBA l_{dn} or CNEL. For multi-family residences, normally acceptable noise levels are those below 65 dBA L_{dn} or CNEL. Most of the on-campus housing falls into the category of multi-family housing (medium- to high-density) and therefore would be subject to the 65 dBA acceptability level for normally acceptable noise levels. Some faculty and staff housing on campus would be subject to the 60 dBA acceptability level. Offices, laboratories, and academic buildings on campus would be subject to the 70 dBA acceptability level for normally acceptable noise levels, which is the threshold for schools and office buildings.

Construction-related noise associated with both of the projects is analyzed to assess whether the projects, individually or cumulatively, would result in a substantial temporary or periodic increase in ambient noise levels in the projects' vicinity above levels existing without implementation of the projects. The criterion noise level for determining the impact significance of construction noise on sensitive receptors varies according to the time of day.

This analysis uses the following significance thresholds which were established in the 2005 LRDP EIR.

For purposes of evaluating noise impacts from traffic and other permanent noise sources, the following noise standards consistent with State guidelines and City of Santa Cruz General Plan were used:

– 60 dBA CNEL for single-family residences

– 65 dBA CNEL for multi-family residences

– 70 dBA CNEL for schools and parks

A substantial permanent increase in noise was evaluated based on the following criteria:

– A 3 dBA or greater increase if CNEL for Without Project scenario is equal to or greater than 65 dBA

– A 5 dBA or greater increase if CNEL for Without Project scenario is 50–65 dBA

– A 10 dBA or greater increase if CNEL for Without Project is < 50 dBA

A substantial temporary increase in ambient noise levels (associated mainly with construction activities) was evaluated based on the following criteria:

– 80 dBA Leq (8h)[9] daytime

– 80 dBA Leq (8h) evening

– 70 dBA Leq (8h) nighttime

<u>Sensitive Receptors</u>

For the purpose of this analysis, noise-sensitive receptors include residences, daycare centers, schools, hospitals and parks. On campus, academic buildings are considered noise sensitive. Noise sensitive receptors located near the proposed Recycling Yard site include: the temporary apprentice housing, which are used from April through October and are located approximately 150 feet south of the site; the Village, a student housing facility with a small academic building, 600 feet northeast of the Recycling Yard site; and Ranch View Terrace, a faculty and staff housing development approximately 1,200 feet south of the site. The sensitive receptor located nearest to the Bike Path site is the Village, which is approximately 100 feet east of the proposed construction area.

The nearest off-campus residences are located approximately 2,000 feet from the project sites. The proposed Recycling Yard Project and Bike Path Project are internal to the campus, and existing on-campus buildings and surrounding topography, as well as distance, would help to shield off-campus residences from exposure to excessive noise levels associated with project construction and operation. Therefore, noise and vibration levels at off-campus residences were not included in this analysis.

Two fifteen-minute noise measurements were conducted near the project site on January 29, 2015: one at the temporary apprentice housing and one at Ranch View Terrace. Noise measurements were taken using an ANSI Type II integrating sound level meter. The noise level at the temporary apprentice housing was recorded at 45 dBA and the noise level at Ranch View Terrace was recorded at 44.5 dBA. The Village is in a similar location with respect to traffic and other existing noise sources, and was observed during a site visit to have a similar level of ambient noise; however, The Village has an approximately 15 foot tall rock wall barrier between it and the project site. Standard attenuation from a masonry wall is 5 to 10 dBA, and the rock wall would be expected to provide similar attenuation. Therefore, it is conservatively assumed that any noise from the site would be attenuated by 5 dBA at this location.

6.12.3 Impact Analysis

a, c) Recycling Yard

Phase 2 of the Recycling Yard Project would involve the construction of the 13,000 sf Material Recovery Facility building and an in-vessel composting system. It would also shift the existing sort line from the Physical Plant Corporation Yard to the project site. Operations at the sort line include movement of recyclable materials, such as glass and plastic, from trucks into large bins and dumpsters. Operational noise sources associated with the proposed Recycling Yard Project include noise from the sort line and noise generated by composting operations. The composter itself would have a rotating drum that would operate continually using electricity and would therefore not have an engine that would generate a substantial level of noise. Equipment that would be used in conjunction with the composter includes a RotoChopper, a grinder used for the composting process and a loader, all of which would be sources of operational noise. The sort line, composter, and grinder might be located inside of the building; however,

[9] $L_{eq(8h)}$ is an average measurement over an eight-hour period.

it is likely that the building would not be fully enclosed. Preliminary plans show the building open on the north side, where recycling and compost collection trucks back in to unload.

Traffic. Operation of the Recycling Yard would require approximately 21 off-campus truck trips per month, an average of about one per day. This would be 27 trips fewer per month than occur under existing conditions; however, their on-campus destination would be altered as a result of the Recycling Yard Project and therefore, the noise from the trucks would also be experienced in new locations, specifically near the Recycling Yard site. In addition, the Project would result in new intra-campus trips to the site. Three recycling trucks would each visit the proposed Recycling Yard up to four times a day, Monday through Friday, beginning at 7:00 AM and completing their work in the yard by 2:00 PM. Also, a roll-off truck for compost would make deliveries twice a day, between 8:30 AM and 1:00 PM.

The increase in traffic noise near the project site and on the main campus roads would be minor due to the small number of trips. While trucks may be idling on-site for short periods of time, they are required by the California Air Resources Board to idle for no longer than five minutes. Furthermore, the noise generated by an idling truck is quieter than the other equipment that would be operating on-site; therefore, idling trucks would not contribute substantially to noise levels.

Sort Line. The Recycling Yard Project Phase 2 includes the relocation of the existing sort line from the corporation yard area near the base of campus to the project site. Operations at the sort line would include the sorting of recyclable materials, such as glass, plastic, and paper, from non-recyclable materials. Separated CRV materials flow into roll-off boxes for accumulation. When full, these boxes are hauled to commercial recycling facilities and sold. The sort line would be operated for three hours per day, three days per week, likely Tuesday, Wednesday and Thursday from 9:00 AM to 12:00 PM.

Operational noise estimates for the sort line were based on noise levels measured at the existing sort line location. One fifteen-minute noise measurement was conducted at a distance of approximately 20 feet from the existing sort line using an ANSI Type II integrating sound level meter on January 29, 2015. The Leq was measured at 74.2 dBA. This reference noise level was used to estimate the noise levels that would be experienced at sensitive receptors near the proposed Recycling Yard site based on a standard noise attenuation rate of 6 dBA per doubling of distance. In addition to this standard attenuation calculation, the presence of intervening topography or structures between the noise source and a receptor would reduce sound levels at the receptor. The sort line would be operated inside of the MRF; however, the MRF may not be fully enclosed and the materials that would be used for construction of the building are unknown at this time. Therefore, the assessment of noise from the sort line does not include any attenuation from the proposed MRF.

Table 6.12-2 identifies the resulting noise levels that would be experienced at nearby receptors during sort line operations while accounting for the current ambient noise level.

Table 6.12-2
Sort Line Noise Impacts

	Approximate dBA L_{dn}
Temporary Apprentice Housing (150 feet)	57
The Village (600 feet)	40*
Ranch View Terrace (1,200 feet)	39

* This calculation includes attenuation of 5 dBA due to the existing rock wall between the project site and The Village, as well as 5 dBA of attenuation due to the MRF walls

Composting Operations. The new compost processing facility would process about 1,100 tons per year of organic materials. This would require that a roll-off box of compostable material would be delivered to the Recycling Yard twice a day, Monday through Friday. The organic materials would be pre-processed with a grinder (RotoChopper), then mixed and loaded into the composting vessel. The grinder would operate for about four hours a day, three days per week. A RotoChopper is the preferred grinder for this project. RotoChoppers have been found to produce up to 100 dBA during operation (http://www.gov.mb.ca/conservation/eal/archive/2012/summaries/5539.pdf). A loader would also be operated as part of the composting operations, during the same hours as the grinder. The loader would also be used approximately one hour per day for other tasks, such as loading mulch. A loader typically produces noise levels of approximately 85 dBA at a distance of 50 feet (http://www.epa.gov/hudson/pdf/2006_03_21%20Phase%20I%20FDR%20ATTACHMENT%20J.pdf).

Table 6.12-3 identifies the noise levels that would be experienced at nearby receptors during the four hours per day in which the grinder and loader would be operating. This is a worst-case scenario, as both pieces of equipment would not necessarily operate during the same four hours. Table 6.12-4 identifies the noise levels that would be experienced at nearby receptors during the one hour per day in which the loader would be operating without the grinder. These noise levels are based on the additional noise generated by the equipment, as well as the current ambient noise level at the receptors.

Table 6.12-3
Composting (Grinder and Loader) Noise Impacts

	Approximate dBA L_{dn}
Temporary Apprentice Housing (150 feet)	72
The Village (600 feet)	62*
Ranch View Terrace (1,200 feet)	61

* This calculation includes attenuation of 5 dBA due to the existing rock wall between the project site and the Village

Table 6.12-4
Composting (Loader) Noise Impacts

	Approximate dBA L_{dn}
Temporary Apprentice Housing (150 feet)	76
The Village (600 feet)	58*
Ranch View Terrace (1,200 feet)	58

* This calculation includes attenuation of 5 dBA due to the existing rock wall between the project site and the Village

Total Operations. The overall resulting noise levels at the nearest sensitive receptors were calculated based on the ambient noise level at each, as well as the estimated additional noise from the new equipment (the sort line, the grinder, and the loader) (Table 6.12-5).

Table 6.12-5
Total Noise Impacts

	Approximate dBA L_{dn} (All Project Components)	**Existing Noise Level (dBA L_{dn})**	**Change in Noise Level (dBA L_{dn})**	**Threshold (dBA Increase)**	**Threshold Exceeded?**
Temporary Apprentice Housing (150 feet)	73	45	+ 28	+ 10	Yes
The Village (600 feet)	56*	45	+ 11	+ 10	Yes
Ranch View Terrace (1,200 feet)	56	45	+ 11	+ 10	Yes

* This calculation includes attenuation of 5 dBA due to the existing rock wall between the project site and the Village

The maximum noise level at the nearest sensitive receptor, the temporary apprentice housing, would be 73 dBA L_{dn}, the maximum noise level at The Village (600 feet from the site) would be 56 dBA $L_{dn,}$ and the maximum noise level at Ranch View Terrace (1,200 feet from the site) would be 56 dBA L_{dn}. This represents an increase of 28 dBA, 11 dBA, and 11 dBA (respectively) over existing conditions. The 2005 LRDP EIR thresholds limit noise increases at sensitive receptors with ambient noise levels of less than 50 dBA to a 10 dBA increase. This threshold would be exceeded at all three receptors. The impact at the Village and at Ranch View Terrace would be reduced to a less than significant level with implementation of Recycling Yard Mitigation Measure NOISE-1. With implementation of Recycling Yard Mitigation NOISE-1, the average noise level at the temporary apprentice housing would be reduced to 63 dBA L_{dn}, which is below the threshold of 65 dBA for multi-family residential developments. However, this would still represent an increase of 18 dBA L_{dn} over existing conditions, which exceeds the threshold of 10 dBA L_{dn}. The noise level at the temporary apprentice housing could be reduced further by moving the composting and sorting equipment further from the temporary apprentice housing, and/or by constructing additional barriers, such as a solid wooden fence along the southern boundary of the Farm that would break the line of sight between the temporary apprentice housing and the noise source. The increase in noise level could be reduced below the threshold by locating the equipment 350 feet from the temporary apprentice housing, on the southern edge of the Recycling Yard site. This could be accomplished at a shorter distance, with one or more additional sound barriers. Therefore, implementation of Recycling

Yard Mitigation NOISE-2 would reduce the impact at the temporary apprentice housing to a less-than-significant level.

> **Recycling Yard Mitigation NOISE-1:** A building, masonry sound barrier, earthen landscaped berm, or berm/barrier combination shall be constructed surrounding the grinder and area where the loader will operate in conjunction with the grinder to reduce noise associated with composting operations. The sound barrier shall be designed to break line-of-sight between exterior areas associated with the sensitive receptors and the composting operations. Such a barrier must be shown to reduce noise by 10 dBA at the temporary apprentice housing, 2dBA at the Village, and 2 dBA at Ranch View Terrace.

> **Recycling Yard Mitigation NOISE-2:** The composting operations and sort line shall be located at least 350 feet from the temporary apprentice housing on the Farm, and/or additional sound barriers shall be constructed to reduce the average noise level at the temporary apprentice housing, with the project, to 55 dBA L_{dn}. Additional noise analysis shall be conducted during detailed design of the Recycling Yard Project Phase 2 to evaluate whether the proposed design meets this performance standard. The building location and layout and the design of the barriers shall be adjusted further as necessary to meet the performance standard.

Bike Path

The proposed Bike Path Project would realign an existing bike path, and would not represent a new land use. Existing operations and related noise on the bike path would not be affected by the proposed project. There would be no impact.

b) During the construction phases of both the Recycling Yard Project and the Bike Path Project, heavy equipment would be required for site preparation and construction. Construction vibration sources have a wide range of energy and velocity, as a function of time, transmitted on the ground. The ground motion caused by vibration is measured as particle velocity in inches per second and, in the U.S., is referenced as vibration decibels (VdB).

The Federal Transit Administration (FTA) has identified vibration impact criteria for sensitive buildings, residences, and institutional land uses near rail transit and railroads. Because construction thresholds are based on single events, they do not apply narrowly to railway operations, but can be used for most construction activities. According to the FTA, groundborne vibration impact criteria for residential receptors are 72 VdB for frequent events, 75 VdB for occasional events, and 80 VdB for infrequent events (FTA 2006). As construction would be temporary and infrequent, a threshold of 80 VdB is used for this analysis.

Recycling Yard

The Recycling Yard project site is located on a university campus and construction would take place from June through September (Phase 1) and September through March (Phase 2). Accordingly, the nearby sensitive receptors described above (the temporary apprentice housing, the Village, and Ranch View Terrace) would all be occupied during some phase of construction.

Table 6.12-6 identifies various vibration velocity levels for the types of construction equipment that would operate at the project site during construction. Pile drivers, which generate high levels of vibration, would not be used for the proposed project.

Table 6.12-6
Vibration Source Levels for Construction Equipment

Equipment	Approximate VdB		
	150 Feet from the Source	**600 Feet from the Source**	**1,200 Feet from the Source**
Loaded Trucks	62	44	35
Jackhammer	55	37	28
Bulldozer	34	46	37

Source: Federal Railroad Administration, 2005

As illustrated in Table 6.12-6, vibration levels could reach up to 62 VdB at the nearest sensitive receptors, which are the residences located 150 feet to the south of the project site. None of the receptors would experience vibration levels that exceed the groundborne velocity threshold level of 80 VdB established by the FTA for noise-sensitive buildings, residences, and institutional land uses. Impacts would therefore be less than significant.

<u>Bike Path</u>

The sensitive receptor nearest to the Bike Path site is The Village, located 100 feet east of the Bike Path Project site. Vibration levels could reach approximately 69 VdB at this location, which is below the groundborne velocity threshold level of 80 VdB for noise-sensitive buildings, residences, and institutional land uses. Impacts would therefore be less than significant.

d) <u>Recycling Yard</u>

Construction of the proposed Recycling Yard Project would involve the use of heavy construction equipment. Noise levels as a result of project construction activities could impact the on-campus residences located 150 feet to the south of the project site, the student housing facilities located 600 feet northeast of the project site, and the faculty and staff housing development located 1,200 feet south of the project site.

Table 6.12-7 demonstrates the typical noise levels associated with heavy construction equipment. As shown therein, noise generated by construction equipment would range from 58 to 81 dBA at a distance of 150 feet from the construction site (the temporary apprentice housing), 46 to 69 dBA at a distance of 600 feet from the construction site (The Village), and 40 to 63 dBA at a distance of 1,200 feet from the construction site (Ranch View Terrace).

Table 6.12-7
Typical Noise Levels at Construction Sites

Equipment	Typical Noise Level (dBA)			
	100 Feet from the Source	**150 Feet from the Source**	**600 Feet from the Source**	**1,200 Feet from the Source**
Air Compressor	76	72	60	54
Backhoe	75	71	59	53
Concrete Mixer	80	76	64	58
Crane	78	74	62	56
Dozer	85	81	69	63
Forklift	62	58	46	40
Generator	75	71	59	53

Grader	80	76	64	58
Paver	84	80	68	62
Saw	65	61	49	43
Scraper	84	80	68	62
Truck	83	79	67	61

7 Source: FTA, May 2006. Noise levels at 150, 450 feet, 600 feet and 1,200 feet were extrapolated using a 6 dBA attenuation rate for the doubling of distance.

The highest levels of construction noise would be generated during site preparation, grading, and building construction. Noise levels typically attenuate (or drop off) at a rate of 6 dB per doubling of distance from point sources such as construction equipment. As previously mentioned, the closest sensitive receptors are located approximately 150 feet from where proposed construction activities would occur. Therefore, temporary noise generated by construction activities at these nearby student housing facilities (the temporary apprentice housing) could be as high as 81 dBA. This would exceed the threshold of 80 dBA Leq during daytime hours.

As required by LRDP Mitigation NOIS-1, which is applicable to and included in the proposed project, the Campus must implement a construction noise mitigation plan for all construction projects on the campus. The noise mitigation plan must include the requirement that all construction equipment be equipped with feasible noise reduction devices, and also must require noticing of loud construction activities and place certain constraints on the scheduling of such activities. Implementation of LRDP Mitigation NOIS-1 would reduce the impacts from construction of the Recycling Yard Project at nearby sensitive receptors but would not reduce the noise level at the temporary apprentice housing below the threshold of 80 dBA. Recycling Yard Mitigation NOISE-3, which requires construction of a temporary noise barrier between the construction site and the temporary apprentice housing, would reduce the impact to a less-than-significant level.

Bike Path

Construction of the proposed Bike Path would involve the use of heavy construction equipment. Noise levels from construction activities could impact the on-campus residences located 100 feet east of the project site (the Village) and 700 feet south of the project site (the temporary apprentice housing). As shown in Table 6.12-7, temporary noise generated by construction activities could be as high as 85 dBA at 100 feet from the source. The Village is located at this distance; however, the existing rock barrier between The Village and the Bike Path would reduce this noise level by 5 dBA, thereby ensuring that noise levels would not exceed the 80 dBA threshold during daytime hours at this sensitive receptor. Construction noise levels at greater distances would not exceed the 80 dBA threshold, as shown in Table 6.12-7. Implementation of LRDP Mitigation NOIS-1, which requires a construction noise mitigation plan for all construction projects on the campus, would further reduce the impacts from construction of the Bike Path Project at nearby sensitive receptors.

Recycling Yard Mitigation NOISE-3: The construction contractor shall provide a temporary wooden fence with a height that blocks the line-of-sight between the noise source and the temporary apprentice housing during construction of the Recycling Yard Phase 1 and Phase 2.

Combined Construction Noise

Construction of Phase 1 of the Recycling Yard Project and construction of the Bike Path Project would overlap. Noise from concurrent construction would generate noise levels of approximately 81 dBA at the temporary apprentice housing. Implementation of Recycling Yard Mitigation NOISE-3 would reduce this below 80 dBA. As required by LRDP Mitigation NOIS-1, which is applicable to the proposed Recycling Yard and Bike Path projects, the Campus must implement a construction noise mitigation plan for all construction projects on the campus. The noise mitigation plan must include the requirement that all construction equipment be equipped with feasible noise reduction devices, and also must require noticing of loud construction activities and place certain constraints on the scheduling of such activities. By selecting quieter procedures or machines and implementing noise control-features requiring no major redesign or extreme cost (e.g., improved mufflers, equipment redesign, use of silencers, shields, shrouds, ducts, and engine enclosures), as required by LRDP Mitigation NOIS-1, the combined impact from construction of the Recycling Yard and Bike Path Projects would be reduced below 80 dBA at the temporary apprentice housing and the Village, which are the sensitive receptors closest to the two project sites; therefore, the impact would be less than significant.

Summary

Because the project incorporates LRDP Mitigation NOIS-1 and with the adoption of mitigation measures Recycling Yard Mitigation NOISE-1, NOISE-2, and NOISE-3, all noise impacts of the proposed projects would be less than significant.

7.1 POPULATION & HOUSING

POPULATION & HOUSING Would the project…	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☐	☑
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☐	☑
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☐	☑
d) Create a demand for housing that cannot be accommodated by local jurisdictions?	☐	☐	☐	☐	☑

More detail on population and housing issues related to development under the campus' 2005 LRDP are described in Volume II, Section 4.11 of the 2005 LRDP EIR (UCSC 2006b).

a,d) The Projects would not construct new homes or businesses or construct infrastructure which would induce population growth or create new demand for housing, either directly or indirectly. The Recycling Yard Project would serve the existing and projected Campus population. The Bike Path Project would not increase the capacity or extent of the facility. No impact would occur.

b,c) No housing is present on the Project sites. The Projects would not displace existing housing or people. No impact would occur.

Summary

The proposed Projects would not result in significant impacts related to population and housing.

7.2 PUBLIC SERVICES

PUBLIC SERVICES Would the project…	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:					

PUBLIC SERVICES Would the project…	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
i) Fire protection?	☐	☐	☐	☑	☐
ii) Police protection?	☐	☐	☐	☑	☐
iii) Schools?	☐	☐	☐	☐	☑
iv) Parks?	☐	☐	☐	☑	☐
v) Other public facilities?	☐	☐	☐	☑	☐

Public services issues relevant to development under the campus' 2005 LRDP, of which the proposed project is an element, are described in Volume II, Section 4.12 of the 2005 LRDP EIR (UCSC 2006b).

a) i-iV) As discussed in Section 3.7, above, the proposed Bike Path and Recycling Yard Projects would not accommodate or result in an increase in Campus population. The construction of the new Recycling Yard would slightly increase the need for fire and police protection. However, this increase in demand for services would not be great enough to result in the need for construction of new facilities. The impact would be less than significant and mitigation is not required. The Bike Path Project would not increase the need for public services and no impact would occur.

Summary

The proposed Projects would not create any significant impacts related to public services.

7.3 RECREATION

RECREATION Would the project…	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☑	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☐	☑

Recreation issues relevant to development under the campus' 2005 LRDP are described in Volume II, Section 4.12, of the 2005 LRDP EIR (UCSC 2006b), from which the analysis presented below is tiered.

a) As discussed in Section 3.7, above, the proposed Bike Path and Recycling Yard Projects would not accommodate or result in an increase in Campus population or otherwise increase use of existing recreational facilities.

b) The Great Meadow Bike Path has substantial recreational use as well as use by Campus commuters. As discussed in Section 6.16, below, improvements to the intersection of the bike path and Village Road are necessary to mitigate an existing safety hazard which could be exacerbated by the increase in truck trips crossing the bike path which would be generated by the Recycling Yard Project. The potential environmental impacts of the Bike Path Project are analyzed in other sections of this Initial Study.

Summary

The proposed projects would not create any significant impacts associated with recreational facilities.

7.4 TRAFFIC, CIRCULATION AND PARKING

TRAFFIC, CIRCULATION, & PARKING Would the project…	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths and mass transit?	☐	☐	☐	☑	☐
b) Conflict with applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☐	☑
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☐	☑
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☐	☑
e) Result in inadequate emergency access?	☐	☐	☐	☑	☐
f) Conflict with applicable adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☑	☐

Traffic and transportation issues relevant to development under the campus' 2005 LRDP are described in Volume II, Section 4.13, of the 2005 LRDP EIR (UCSC 2006b). That section also provides detail on program-level mitigation measures. There are no previously adopted LRDP EIR mitigations for potential impacts to transportation and circulation which are applicable to the Recycling Yard or Bike Path Project

a) The Recycling Yard Project would result in a net reduction in the number of off-campus trips made by campus trucks to the City of Santa Cruz Resource Recovery Facility and the Monterey Regional Waste Management facility. The Project would not increase Campus population and therefore would not increase vehicle commute trips to the Campus or demand for public transit. The proposed Recycling Yard Project would add approximately 14 new daily round trips to the site by Campus trucks for recycling operations and organic feedstock delivery, and vendors that now pick up recyclables at the Corporation Yard on the lower campus about twice a month would make trips to the new Recycling Yard instead. The additional truck trips to the new Recycling Yard would be spread out over the course of the day; the number of trips is too small to affect the operations of local Campus roads and intersections or the efficiency of public transit operations. The proposed Bike Path Project would not result in new vehicle trips or demand for public transit and would not increase bicycle traffic on the path by increasing capacity or expanding the area served. For these reasons, the Projects would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system.

b) There is no Congestion Management Agency for the City or County of Santa Cruz. For the reasons discussed under a), above, the proposed project would not conflict with level of service standards at any intersection, road or highway. No impact would occur.

c) The campus is not within an air safety zone that would require restrictions on development and there are no airports in the campus vicinity. The proposed project has no potential to affect air traffic patterns.

d) Phase 2 of the proposed Recycling Yard Project would increase the number of trucks crossing the bike path on Village Road. As discussed in Section 3.3, above, there are several safety issues for cyclists at this intersection, resulting partly from the configuration of the intersection. The increase in the number of trucks could exacerbate this existing hazard. For this reason, the Campus has planned the Bike Path Project in conjunction with the Recycling Yard Project. The Bike Path Project would bring the bicycle facility up to current Caltrans code. The Bike Path Project would improve sight lines by squaring up the intersection, modifying the grade of Village Road so that vehicles are level with the bike path at the intersection, and eliminating the dip in the downhill bike path above the intersection. Other improvements to the intersection would include passive detection flash beacons which would be activated as cyclists near the intersection to alert vehicle drivers and pedestrians of their approach, and improved signage. The Bike Plan Project would result in an overall improvement in the safety of the bike path, even with the addition of approximately 14 new daily truck trips. The Bike Path Project would also improve safety conditions for pedestrians crossing the Bike Path at Village Road by improving visibility for both pedestrians and cyclists. Construction of the Bike Path Project is planned to take place concurrent with construction of Phase 1 of the Recycling Yard Project. Therefore, the improvements would be in place before construction of Phase 2 of the Recycling Yard Project begins. However, if construction of the Bike Path Project does not take place as planned, the Recycling Yard Project could exacerbate the existing safety hazard, which would be a potentially significant impact. Implementation of Recycling Yard Mitigation TRA-1 would reduce the potentially significant impact to a less-than-significant level by ensuring that the Bike Path Project is completed before Phase 2 of the Recycling Yard Project.

> **Recycling Yard Mitigation TRA-1:** The Campus shall complete construction of the Bike Path Project before Phase 2 of the Recycling Yard Project is completed.

Truck turning-movement analysis indicates that large tractor trailer trucks that pick up paper from the campus approximately once a month, would not be able to make the turn onto Village Road from Hagar Drive, or to navigate Village Road between Hagar and the bike path without encroaching on other traffic lanes. To ensure that this does not result in a hazard to other vehicles and cyclists on these roads, the Campus would implement Recycling Yard Mitigation TRA-1. As this type of truck would access the site infrequently, this would reduce the impact to a less than significant level.

> **Recycling Yard Mitigation TRA-2:** The Campus shall require that a flagger be provided to assist any truck with a trailer travelling to and from the Recycling Yard.

e) As discussed in Section 6.8, above, and consistent with LRDP Mitigation HAZ-9A, which is included in the proposed Bike Path and Recycling Yard Projects, Campus Standards require that contractors provide notification two weeks in advance of any road closure, clearly designate alternate routes, and keep fire hydrants accessible at all times. These provisions, which would be a requirement of construction contract specifications, would ensure that construction does not interfere with emergency access. The impact of the proposed projects on emergency access would be less than significant.

f) As discussed under item “d),” above, if construction of the Bike Path Project does not take place as planned, the Recycling Yard Project could exacerbate the existing safety hazard, which would be a potentially significant impact. Implementation of Recycling Yard Mitigation TRA-1 would reduce the potentially significant impact to a less-than-significant level by ensuring that the Bike Path Project is completed before Phase 2 of the Recycling Yard Project.

Summary

All impacts of the Bike Path Project related to transportation and circulation would be less than significant. No mitigation is required. With implementation of Recycling Yard Mitigation Measures TRA-1 and TRA-2, all impacts of the Recycling Yard related to transportation and circulation would be less than significant.

7.5 UTILITIES & SERVICE SYSTEMS

UTILITIES & SERVICE SYSTEMS Would the project…	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☐	☑
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☑	☐
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☑	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☑	☐
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project’s projected demand in addition to the providers existing commitments?	☐	☐	☐	☐	☑
f) Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?	☐	☐	☐	☐	☑
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☐	☑
h) Require or result in the construction or expansion of electrical, natural gas, chilled water, or steam facilities, which would cause significant environmental impacts?	☐	☐	☐	☑	☐

UTILITIES & SERVICE SYSTEMS Would the project…	Potentially Significant Impact	Project Impact Adequately Addressed in LRDP EIR	Less than Significant with Project-Level Mitigation Incorporated	Less than Significant Impact	No Impact
i) Require or result in the construction or expansion of telecommunication facilities, which would cause significant environmental impacts?	☐	☐	☐	☐	☑

Utility issues and programmatic mitigation measures relevant to development under the campus' 2005 LRDP are described in Volume II, Section 4.14, of the 2005 LRDP EIR (UCSC 2006). The following, previously adopted LRDP EIR mitigations for potential impacts related to utilities are applicable to and included in the project (the full text of the mitigation measures is included in Appendix B):

LRDP EIR Mitigation UTIL-4 (improvements to recycling and waste reduction programs)

LRDP EIR Mitigation UTIL-9A (continuation of various current water conservation strategies)

a) This issue is addressed in Section 6.9, *Hydrology and Water Quality*.

b,d,e) The discussion of these impact areas are addressed in separate sections for domestic water and wastewater.

Domestic Water

b) Construction of a new water line to serve the new Recycling Yard require approximately 360 feet of trenching, to connect to the Campus distribution system in the Farm access road, approximately 300 feet to the southeast of the Project site (Figure 3-5). The disturbance associated with construction of the new water line is taken into account in the construction air quality, biological resources, climate change, cultural resources, and noise analysis in sections 6.3, 6.4, 6.7, and 6.12 of this Initial Study.

d) The Bike Path Project would not result in any new water use. The Material Recovery Facility would include a restroom; however, as the Project would not increase Campus population, use of the restroom would not increase Campus water use. Activities at the Recycling Yard would use an estimated 35,000 gallons per year (gpy) for cleaning the composter and other equipment and the pad where composting materials would be sorted and staged for mixing. The Santa Cruz Water Department (SCWD) provides potable water to the Campus. The Campus currently has no source of non-potable water.

The Water Supply Assessment prepared by the City in 2011 for the City's General Plan Update, concluded that the City's existing water supply would be adequate to meet projected demand through 2020 in normal water years, but may fall short of demand by up to 223 million gallons by 2030, if the higher of two potential growth scenarios proves accurate (Erler & Kalinowsky 2011). However, the City does not have adequate supplies to meet existing or future demand under drought conditions. Furthermore, the City is in the process of preparing a Habitat Conservation Plan (HCP) in connection with an incidental take permit under the federal Endangered Species Act. Although the outcome of the permit and HCP process is uncertain, according to the City's 2010 Urban Water Management Plan, it is clear that it will result in a reduction in the availability of water from the City's existing flowing sources, which would increase reliance on Loch Lomond Reservoir and thereby exacerbate the problem of water shortage during periods of drought (City of Santa Cruz Water Department 2011). To address these challenges, the City has been exploring alternatives for supplementing the existing water supply for a number of years. However, it is not certain if and when the City will develop a means of augmenting its supply. The City adopted a Water Shortage Contingency Plan in 2009 to establish its approach to reducing demand under different shortage scenarios (City of Santa Cruz Water Department 2009). The Plan includes reduction goals for UC Santa Cruz under each shortage scenario. These goals were developed in consultation with the Campus. The Campus reached, and even exceeded its reduction targets in the 2010 and 2014 when the City implemented the Plan. In addition, the Campus has been implementing water conservation measures, including improvements to irrigation systems and retrofitting restroom fixtures, which have contributed to a reduction in per capita water use UC Santa Cruz reduced per capita water use nearly 36% from the period between 2002 and 2005, to 2011-12 (UC Santa Cruz 2013). The Campus is planning additional fixture retrofits and infrastructure improvements which will further increase the efficiency of water use on the campus.

The Project's water use of 35,000 gpy, an average of 95 gallons per day, is approximately equivalent to the per capita water use in the SCWD service area in 2010 (City of Santa Cruz Water Department 2011). This is approximately 0.001 percent of the total SCWD system-wide demand in 2012, and .02 percent of UC Santa Cruz main campus demand in 2013 (177 million gallons). This increase in Campus water demand would not be significant, as there are adequate supplies to meet system-wide demand under normal hydrologic conditions and, under drought conditions, the increase would too small to cause a noticeable increase in the level of curtailment required of all water customers. Therefore, the project impact would be less than significant and the Project would not make a cumulatively considerable contribution to a significant water supply impact.

Wastewater

b, d) The Bike Path Project would not result in any wastewater generation. The Recycling Yard would be connected to the Campus sanitary sewer system at Village Road near the south end of the Village, which would require approximately 460 feet of trenching in or adjacent to the road (Figure 3-5). The disturbance associated with construction of the new sewer line is taken into account in the construction air quality, biological resources, climate change, cultural resources, and noise analysis in sections 6.3, 6.4, 6.7, and 6.12 of this Initial Study.

The Project would increase Campus flows to the City's wastewater system by approximately 35,000 gpy. The Campus sewer system flows to the City's sewer conveyance system at the Campus' main entrance, and is treated at the City's wastewater treatment plant. The treatment plant has a design capacity of 17 million gpd and current average daily flow of 10 million gpd[10]. The 2005 LRDP EIR estimated that wastewater flows projected under the 2005 LRDP would account for less than 6 percent of average daily flow at the plant and there would be adequate capacity to serve the campus. Even with increases in flows from other sources, the City indicated that the wastewater treatment plant would have adequate capacity to serve the projected campus demand through 2020 (Vol, 2, p. 4.15-22). The LRDP EIR analysis was based upon projected indoor water use of 237 mgy. In 2012, the Campus' indoor water use was about 116 mgy . With the addition of 35,000 gpy from the new Recycling Yard, the Campus' wastewater discharge would be well within the amount analyzed in the 2005 LRDP EIR. The existing wastewater treatment plant has adequate capacity to treat wastewater from the proposed Project and the impact would be less than significant.

c) The proposed Bike Path Project would increase impervious surface slightly, but would not require construction of new storm water facilities. As discussed in Section 6.9, above, the Recycling Yard site is in a closed depression, and all runoff from the Project site would be infiltrated into the ground on-site. The disturbance associated with construction of the new sewer line is taken into account in the construction air quality, biological resources, climate change, cultural resources, and noise analysis in sections 6.3, 6.4, 6.7, and 6.12 of this Initial Study.

[10] http://www.cityofsantacruz.com/departments/public-works/wastewater-treatment-facility

f) Phase 1 of the Project would not change the amount of solid waste generated by the Campus or the amount of waste going to landfill. The addition of a composting facility in Phase 2 would reduce the amount of waste going to City of Santa Cruz Landfill. No impact would occur.

g) The new composting system would comply with applicable laws and regulations, which may include the requirement for a permit from CalRecycle may be required to operate the new composting system, depending on the volume of materials to be processed, and/or the State Water Resources Control Board's proposed General Waste Discharge Requirements for Composting Operations. Coverage under the statewide General Permit for Industrial Activities may also be required. The impact would be less than significant and no mitigation is required.

h, i)The Project would not be served by the Campus' cooling water, heating hot water, natural gas, or telecommunications systems. The connections to the Campus electrical distribution system would be made at Village Road near the south end of the Village, which would require approximately 460 feet of trenching in or adjacent to the road. The disturbance associated with construction of the new electricity line is taken into account in the construction air quality, biological resources, climate change, cultural resources, and noise analysis in sections 6.3, 6.4, 6.7, and 6.12 of this Initial Study. No off-site improvements to the Campus distribution system or PG&E facilities would be required to meet Project demand. The impact would be less than significant and no mitigation is required.

Summary

The project incorporates LRDP EIR mitigations UTIL-4, UTIL-9A and UTIL-9B, and therefore all impacts of the proposed project related to utilities would be less than significant. No project specific mitigation is required.

7.6 MANDATORY FINDINGS OF SIGNIFICANCE

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

a) As discussed in Section 6.4, above, the project site generally lacks suitable habitat for most special-status wildlife species known from the UC Santa Cruz campus and surrounding region. The project may have impacts on individual California red-legged frog, nesting special-status birds, destruction, abandonment, or failure of nests for non-listed bird species that are protected under the Migratory Bird Treaty Act and the state Fish and Game Code, overwintering western burrowing owl, San Francisco dusky-footed woodrat and American badger. These impacts would be reduced to a less-than-significant level with implementation of LRDP EIR Mitigations BIO-2A, BIO-9, BIO-11, BIO-12-A, BIO-12B, and BIO-14, and Recycling Yard Mitigations BIO-1 and BIO-2, which require preconstruction field surveys these species and avoidance measures during construction. The project would not have adverse impacts to special-status plants.

b) The aesthetic impacts of the Project related to development in land designated as Protected Landscape in the LRDP EIR would not contribute to a cumulative impact because there are no other development projects planned for Protected Landscape in the Great Meadow. The emissions of fugitive dust (PM_{10}) from the Recycling Yard and Bike Path Projects would not result in a significant cumulative air quality impact, as no other projects are planned for construction in the vicinity of the Project sites. The potential odor impacts of the Recycling Yard Project would not contribute to a cumulative impact because no other Projects that could produce odors are planned in the vicinity. The potential construction-phase impacts to California red-legged frog, nesting special-status birds, overwintering western burrowing owl, or San Francisco dusky-footed woodrat, would not contribute to cumulative impacts to these species, as no other projects are planned in the vicinity that would affect habitat and LRDP EIR and project mitigations would ensure that construction-phase impacts to the species are avoided. The Project would not generate new vehicle trips or accommodate additional Campus population and therefore would not contribute to any population-related cumulative impacts.

c) As discussed in Section 6.3 and 6.12, above, operational noise and odor impacts of the Recycling Yard Project upon residents of the temporary apprentice housing would be potentially significant. These impacts would be less than significant with implementation of Recycling Yard Mitigation AQ-1, NOISE-1, and NOISE-2.

8 FISH & GAME DETERMINATION

Based on the information presented in this Initial Study, the project does have a potential to adversely affect wildlife or the habitat upon which wildlife depend. Therefore, a filing fee will be paid.

____ Certificate of Fee Exemption

__X__ Pay Fee

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10 AGENCIES & PERSONS CONSULTED

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Dan Blunk .... Environmental Programs Manager
Teresa Buika .... Senior Transportation Planner
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11 REPORT PREPARERS

University of California Santa Cruz

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Appendix A

Proposed Mitigated Negative Declaration

PROPOSED MITIGATED NEGATIVE DECLARATION

Lead Agency:	University of California
Project Proponent:	University of California Santa Cruz
Project Location:	The proposed Recycling Yard and Great Meadow Bike Path project sites are located just north of the 30-acre UCSC Farm, which is operated by the Center for Agroecology and Sustainable Food Systems (CASFS) in the lower campus.
Project Description:	This Initial Study analyzes the environmental effects of two related projects: the Recycling Yard Project and the Great Meadow Bike Path Safety Improvements Project ("Bike Path Project"). The Recycling Yard Project would construct, in two phases, a material recovery facility to accommodate all existing Campus waste recovery services and future composting operations. The Bike Path Project consists of modifications to the intersection of the existing Great Meadow Bike Path and Village Road, which would provide vehicle access to the new recycling yard, and would reconfigure a portion of the bike path to improve safety.
Mitigation Measures:	Recycling Yard Mitigation AES-1 requires changes to the Project design to reduce impacts to scenic vistas and scenic resources. Recycling Yard Mitigation AQ-1 requires preparation and implementation of an Odor Impact Minimization Plan for the proposed composting facility. Recycling Yard Mitigations BIO-1 and BIO-2 require pre-construction monitoring and measures to avoid impacts to California red-legged frog and American badger. Recycling Yard Mitigations NOISE-1, NOISE-2 and NOISE-3 are required to reduce construction and operational noise impacts to nearby residences. Recycling Yard Mitigation TRA-1 requires that the Bike Path Project be completed before Phase 2 of the Recycling Yard Project. Recycling Yard Mitigation TRA-2 requires the use of flaggers for large trucks traveling to the Recycling Yard site. The Recycling Yard and Bike Path Projects also incorporate previously adopted LRDP EIR mitigations. The complete text of these mitigation measures is provided in Appendix B.
Determination:	In accordance with CEQA, an Initial Study has been prepared by UC Santa Cruz that evaluates the environmental effects of the proposed project. On the basis of the project's Initial Study the campus has determined that, with implementation of the mitigation measures listed above, the proposed projects would not have a potentially significant effect on the environment.
Public Review:	In accordance with Section 15073 of the CEQA Guidelines, the Initial Study for the project was circulated for public and agency review from March 10 to April 9, 2015.

Appendix B

2005 LRDP Mitigation Measures

Incorporated as Part of the Proposed Project

2005 LRDP EIR Mitigation Measures Incorporated in the Proposed Project	
4.1 Aesthetics	
AES-3A	For development projects around the lower campus meadows that have the potential to affect scenic resources, the Campus shall conduct visual simulations and, when necessary, shall modify project design to maintain scenic resources, through measures such as changes in scale, massing, building orientation, building finish, screening or other measures to reduce the visual obtrusiveness of the construction.
AES-3B	For Academic Core development in and bordering the Great Meadow, the Campus shall limit the removal of natural vegetation outside building **footprints**, and cluster development at meadow edges.
AES-5A	Prior to design approval of development projects under the 2005 LRDP, the UC Santa Cruz Design Advisory Board shall review project designs for consistency with the valued elements of the visual landscape identified in the 2005 LRDP, and the character of surrounding development so that the visual character and quality of the project area are not substantially degraded.
AES-5C	Campus development shall be designed and construction activities shall be undertaken in a manner that shall minimize removal of healthy and mature trees around new projects, except where the proximity of adjacent mature trees to new development is expected to result in a safety hazard or the ultimate decline of the trees.
AES-5F	Trees identified for removal will be evaluated for their aesthetic value as part of the environmental review process of individual projects. Individual construction projects that result in the removal of large oak trees or other large unique trees considered to be aesthetically valuable components of the landscape shall replace such trees at a 1-to-1 ratio, either on site, or elsewhere on campus via a contribution to the campus's Site Stewardship program for planting replacement trees.
AES-6A	Where there is a potential for reflective glare, as along meadow margins, project design shall provide for the use of non-reflective exterior surfaces, or other design measures to avoid new sources of reflected light.
AES-6B	Lighting for new development projects shall be designed to include directional lighting methods shielded to minimize light spillage and minimize atmospheric light pollution. This lighting should be compatible with the visual character of the project site and meet the UC Regents' Green Building Policies.
AES-6C	As part of the design review process, the UC Santa Cruz Design Advisory Board shall consider project-related light and glare and the Campus shall require the incorporation of measures into the project design to limit both to the extent allowed by code.

2005 LRDP EIR Mitigation Measures Incorporated in the Proposed Project	
AES-6E	As part of the design review process, UC Santa Cruz Design Advisory Board shall review outdoor lighting fixtures for roads, pathways, and parking facilities to ensure that the minimum amount of lighting needed to achieve safe routes is used, and to ensure that the proposed illumination limits adverse effect on nighttime views.
4.3 Air Quality	
AIR-1	The Campus shall apply standard MBUAPCD-recommended mitigation measures during construction of new facilities under the 2005 LRDP, as appropriate: • Water all active construction areas at least twice daily. • Prohibit all grading activities during periods of high wind (over 15 mph). • Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days). • Apply non-toxic binders (e.g., latex acrylic copolymer), as appropriate, to exposed areas after cut and fill operations and hydroseed area. • Require haul trucks to maintain at least 2 feet of freeboard. • Cover all trucks hauling dirt, sand, or loose materials. • Plant vegetative ground cover in disturbed areas as soon as possible. • Cover inactive storage piles. • Install wheel washers at the entrances to construction sites for all exiting trucks. • Pave all roads on construction sites. • Damp-sweep streets if visible soil material is carried out from the construction site. • Post a publicly visible sign that specifies the telephone number and person to contact regarding dust complaints. This person shall respond to complaints and take corrective action within 48 hours. The phone number of the Monterey Bay Unified Air Pollution Control District shall be visible to ensure compliance with Rule 402. • Each project shall limit the area under construction at any one time.
AIR-2A	The Campus shall incorporate in each new project design and construction features that conserve natural gas and/or minimize air pollutant emissions from space and water heating. Specific measures that will be considered for each project include, but are not limited to the following: • Orientation of buildings to optimize solar heating and natural cooling; • Use of solar or low-emission water heaters in new buildings; and/or • Installation of best available wall and attic insulation in new buildings

2005 LRDP EIR Mitigation Measures Incorporated in the Proposed Project	
AIR-6	The Campus will minimize construction emissions by implementing measures such as those listed below: • Require the use of cleaner fuels (e.g., natural gas, ethanol) in construction equipment • Require that construction contractors use electrical equipment where possible • Require construction contractors to minimize the simultaneous operation of multiple pieces equipment at a construction site • Minimize idling time to a maximum of 5 minutes when construction equipment is not in use • Schedule operations of construction equipment to minimize exposure to emissions from construction equipment
4.4 Biological Resources	
BIO-2A	The Campus shall avoid removal of coastal prairie through redesign of proposed development areas and road alignments. The design of all campus facilities shall include a buffer between development and prairie in order to reduce indirect impacts from edge effects such as increases in noxious weed species. The width of each buffer will depend on the site and the nature of adjacent development. The minimum buffer shall be 30 feet from the edge of paved areas or buildings to the edge of coastal prairie. Landscaped areas are acceptable within the habitat buffer, provided that they are planted with species that are not invasive in coastal prairie (i.e., no non-native grasses) and are not fire prone.
BIO-6	To avoid or minimize the introduction or spread of noxious weeds, sudden oak death or pitch canker into uninfested areas, UC Santa Cruz shall incorporate the following measures into project plans and specifications for work on the north campus to be conducted under the 2005 LRDP. • Only certified, weed-free materials shall be used for erosion control. • UC Santa Cruz shall identify appropriate best management practices to avoid the dispersal of noxious weeds, sudden oak death and pitch canker. The Campus shall then include appropriate practices in Campus Standards for construction to be implemented during construction in all north campus areas. Typical best management practices include the use of weed-free erosion control materials and revegetation of disturbed areas with seed mixes that include native species and exclude invasive non-natives. Best management practices to avoid the spread of sudden oak death and pitch pine canker will be determined in consultation with the California Department of Forestry. • In uninfested areas, topsoil removed during excavation shall be stockpiled and used to refill the trench on site if it is suitable as backfill
BIO-9	To minimize disturbance of breeding and dispersing California red-legged frogs, all ground-disturbing construction activity within the Moore Creek watershed, such as vegetation clearing, site leveling, and grading that occurs within designated red-legged frog habitat shall be conducted during the dry season, (after May 1 and before October 15). If ground-disturbing activities cannot be completed within the dry season, UC Santa Cruz shall contact the USFWS field office to initiate the following measures and determine whether additional mitigation measures are necessary to minimize potential impacts.

2005 LRDP EIR Mitigation Measures Incorporated in the Proposed Project	
BIO-11	Prior to construction or site preparation activities, a qualified biologist shall be retained to conduct nest surveys at each site that has appropriate nesting habitat. The survey shall be required for only those projects that will be constructed during the nesting/breeding season of sharp-shinned hawk, golden eagle, northern harrier, long-eared owl, or white-tailed kite (typically February 1 through August 31). The survey area shall include all potential nesting habitat, including mixed evergreen forest, redwood forest, and isolated trees that are within 200 feet of the proposed project grading boundaries. The survey shall be conducted no more than 14 days prior to commencement of construction activities. If active nests of sharp-shinned hawk, Cooper's hawk, golden eagle, northern harrier, Vaux's swift, long-eared owl, and white-tailed kite (or other species protected under the Migratory Bird Treaty Act and the California Fish and Game Code) are present in the construction zone or within 200 feet of the construction zone, a temporary fence shall be erected at a distance of 200 feet around the nest site (or less if determined to be appropriate by the biologist according to the species and site conditions). Clearing and construction within the fenced area shall be postponed until juveniles have fledged and there is no evidence of a second nesting attempt as determined by the biologist.
BIO-12A	Prior to any ground disturbance of grassland habitats on the lower campus, a qualified biologist will conduct a preconstruction survey **to** identify western burrowing owls and/or potential habitat features (e.g., burrows) and to evaluate use by burrowing owls in accordance with current CDFG survey guidelines (CDFG 1995). Surveys will be conducted within the proposed disturbance footprint and a 500-foot radius of the disturbance boundary of each proposed project. For construction activities occurring within the western burrowing owl habitat (whether during breeding or non-breeding seasons), surveys will be conducted within 30 days prior to construction. The surveys will document whether burrowing owls are nesting on or directly adjacent to disturbance areas. Survey results will be valid only for the season during which the survey is conducted. If western burrowing owls are found during the breeding or nonbreeding season, LRDP Mitigation BIO-12B will be implemented
BIO-12B	If burrowing owls are found, the Campus will avoid all burrowing owl nest sites to the extent feasible. Avoidance will include establishment of a non-disturbance buffer zone of at least 250 feet around each nest site during the breeding season. If burrowing owls are found outside the breeding season (September 1–January 31), avoidance will include the establishment of at least a 160-foot non-disturbance buffer zone around each burrow being used. In both cases, highly visible temporary construction fencing will delineate the buffer zone. If burrowing owl nest sites cannot be avoided, the Campus will conduct passive relocation by installing one-way doors in suitable burrow entrances that are used or may be used by the owls. This measure is described in detail below. In order to displace burrowing owls without destroying eggs, young, or adults, one-way doors will be installed on owl burrows before February 1 prior to disturbance, and each burrow will be monitored following CDFG's protocol (CDFG 1995). Suitable artificial burrows will be created nearby according to the conservation measures established for this species. The protocol includes monitoring the burrow for a 48-hour period after the one-way doors are installed. The doors will be checked every 24 hours following installation to determine whether they are still intact. If the one-way door is still correctly installed after a continuous 48-hour period (i.e., no animals have dug up the door and rendered it useless), then the one-way door will be removed and the burrows will be excavated using hand tools and plastic tubing to maintain an escape route for any animals still inside the burrow.

2005 LRDP EIR Mitigation Measures Incorporated in the Proposed Project	
BIO-14	A pre-construction/grading survey of all suitable San Francisco dusky-footed woodrat habitat within 100 feet of the proposed grading footprint shall be conducted by a qualified biologist to detect any woodrat nests. The survey shall be conducted no more than 14 days prior to commencement of construction activities. If active nests (stick houses) are identified within the construction zone or within 100 feet of the construction zone, a fence shall be erected around the nest site with a 100-foot minimum buffer from construction activities. At the discretion of the biologist, clearing and construction within the fenced area would be postponed or halted until juveniles have left the nest. The biologist shall serve as a construction monitor during those periods when construction activities will occur near active nest areas to ensure that no inadvertent impacts on these nests will occur. If any woodrat is observed within the grading footprint outside of the breeding period, individuals shall be trapped and relocated to a suitable location in proximity to the project site by a qualified biologist in accordance with CDFG requirements, and the nest dismantled so it cannot be reoccupied
4.5 Cultural Resources	
CULT-1A	As early as possible in the project planning process, the Campus shall define the project's area of potential effects (APE) for archaeological resources based on the extent of ground disturbance and site modifications anticipated for the proposed project. The Campus shall also review confidential resource records[11] to determine whether complete intensive archaeological survey has been performed on the site and whether any previously recorded cultural resources are present.
CULT-1B	Where native soils will be disturbed, the Campus shall provide and shall require contractor crews to attend an informal training session prior to the start of earth moving, regarding how to recognize archaeological sites and artifacts. In addition, campus employees whose work routinely involves disturbing the soil shall be informed how to recognize evidence of potential archaeological sites and artifacts. Prior to disturbing the soil, contractors shall be notified that they are required to watch for potential archaeological sites and artifacts and to notify the campus if any are found. In the event of a find, the Campus shall implement LRDP Mitigation CULT-1G, below.
CULT-1C	For project sites that have not been subject to prior complete intensive archaeological survey, the Campus shall ensure that a complete intensive surface survey is conducted by a qualified archaeologist during project planning and design and prior to soil disturbing activities. If an archaeological deposit is discovered, the archaeologist will prepare a site record and file it with the California Historical Resource Information System. In the event of a find within the area of potential effects, the Campus shall consult with a qualified archaeologist to design and conduct an archaeological subsurface investigation and/or a construction monitoring plan of the project site to ascertain the extent of the deposit relative to the project's area of potential effects, to ensure that impacts to potential buried resources are avoided

[11]Monterey Bay Archaeological Archives, Department of Anthropology, UC Santa Cruz and California Historical Resources Information System. Northwest Information Center, Sonoma State University.

2005 LRDP EIR Mitigation Measures Incorporated in the Proposed Project	
CULT-1D	If it is determined that the resource extends into the project's area of potential effects, the Campus shall ensure that the resource is evaluated by a qualified archaeologist, who will determine whether it qualifies as a historical resource or a unique archaeological resource under the criteria of CEQA Guidelines §15064.5. This evaluation may require additional research, including subsurface testing, If the resource does not qualify, or if no resource is present within the project APE, this will be reported in the environmental document and no further mitigation will be required unless there is a discovery during construction.
CULT-1G	If an archaeological resource is discovered during construction (whether or not an archaeologist is present), all soil disturbing work within 100 feet of the find shall cease. The Campus shall contact a qualified archaeologist to provide and implement a plan for survey, subsurface investigation as needed to define the extent of the deposit, and assessment of the remainder of the site within the project area to determine whether the resource is significant and would be affected by the project. LRDP Mitigation CULT-1F shall also be implemented.
CULT-2B	As early as possible in the project planning process, the Campus shall define the project's area of potential effects (APE) for historic structures. The Campus shall determine the potential for the project to result in impacts to or alteration of historic structures, based on the extent of site and building modifications anticipated for the proposed project.
CULT-4C	In the event of a discovery on campus of human bone, suspected human bone, or a burial, the Campus shall ensure that all excavation in the vicinity halts immediately and the area of the find is protected until a qualified archaeologist determines whether the bone is human. If the qualified archaeologist determines the bone is human, or if a qualified archaeologist is not present, the Campus will notify the Santa Cruz County Coroner of the find and protect the find without further disturbance until the Coroner has made a finding relative to PRC 5097 procedures. If it is determined that the find is of Native American origin, the Campus will comply with the provisions of PRC §5097.98 regarding identification and involvement of the Native American Most Likely Descendant (MLD).
CULT-5A	During project planning, the Project Manager shall consult the most recent Campus Soils and Geology map to determine whether the proposed project is underlain by a formation that is known to be sensitive for paleontological resources.
CULT-5C	In the event of a discovery of a paleontological resource on campus, work within 50 feet of the find shall halt until a qualified paleontologist has examined and assessed the find and, if the resource is determined to be a unique paleontological resource, the resource is recovered. The Campus shall ensure that all finds are adequately documented, analyzed, and curated at an appropriate institution.
CULT-5D	In the event that a proposed project would result in impacts to a unique paleontological resource, the project planning team shall work together to reduce impacts to the find through design and construction modifications, to the extent feasible.
4.7 Hazards and Hazardous Materials	

2005 LRDP EIR Mitigation Measures Incorporated in the Proposed Project	
HAZ-9A	The Campus shall continue to include the following requirements in its Campus Standards and implement them under the 2005 LRDP: • Construction work shall be conducted so as to ensure the least possible obstruction to traffic. • Contractors shall notify the University's Representative at least two weeks before any road closure. • When paths, lanes, or roadways are blocked, detour signs must be installed to clearly designate an alternate route. Fire hydrants shall be kept accessible to fire fighting equipment at all times. To ensure adequate access for emergency vehicles when construction projects would result in temporary lane or roadway closures, Physical Plant and Physical Planning and Construction shall continue to require that construction and maintenance project managers notify campus police and fire departments and the campus dispatchers of the closures and alternative travel routes.
4.8 Hydrology and Water Quality	
HYD-2B	No grading shall be conducted on hillsides (sites with slopes greater than 10 percent) during the wet season (October 1 through May 31) unless controls that prevent sediment from leaving the site are implemented. Erosion control measures, such as erosion control blankets, seeding or other stabilizing mechanisms shall be incorporated into the project erosion control plan or SWPPP and applied to graded hillside prior to predicted storm events.
HYD-3C	Each new capital project proposed under the 2005 LRDP that creates new impervious surface shall include design measures to ensure that post-development peak flows from 2-, 5- and 10-year storms do not exceed the 2-, 5-, and 10-year pre-development peak flows and that post-development peak flows from a 25-year storm do not exceed the pre-development peak flow from a 10-year storm.
HYD-3D	The Campus shall require each new capital project to include design measures to minimize, to the maximum extent practicable, the increase in the volume of storm water runoff discharged from the project site to sinkholes or natural drainages. These design measures shall include features that maximize infiltration and dissipation of runoff, preferably near the area where new runoff is generated, and may include, but will not be limited to: vegetated swales, bioretention areas, infiltration trenches and basins, level spreaders, permeable pavement, minimizing directly connected impervious surfaces, storage and re-use of roof runoff, and green roofs. Within one year following approval of the 2005 LRDP, the Campus shall provide a protocol for design consultants to use in demonstrating that measures to reduce runoff are included in the project design to the maximum extent practicable
HYD-3E	Design and planning for new pathways and bikeways shall include fencing, signage and/or other design features to control pedestrian/bicycle circulation and minimize the potential for shortcuts. Bridges shall be provided where new pathways cross drainages that become inundated during the rainy season.
4.10 Noise	

2005 LRDP EIR Mitigation Measures Incorporated in the Proposed Project	
NOIS-1	Prior to initiation of construction of a specific development project, the Campus shall approve a construction noise mitigation program that shall be implemented for each construction project. This shall include but not be limited to the following: • Construction equipment used on campus is properly maintained and has been outfitted with feasible noise-reduction devices to minimize construction-generated noise. • Laydown and construction vehicle staging areas shall be located at least 100 feet away from noise-sensitive land uses as feasible. • Stationary noise sources such as generators or pumps shall be located at least 100 feet away from noise-sensitive land uses as feasible. • Notices of the dates and hours of anticipated construction shall be posted in academic, administrative, and residential buildings within 100 feet of construction noise sources at least a week before the start of each construction project. • Loud construction activity (i.e., construction activity such as jackhammering, concrete sawing, asphalt removal, and large-scale grading operations) within 100 feet of a residential or academic building shall not be scheduled during finals week. • Loud construction activity as described above within 100 feet of an academic or residential use shall, to the extent feasible, be scheduled during holidays, Thanksgiving break, Christmas break, Spring break, or Summer break. • Loud construction activity within 100 feet of a residential building shall be restricted to the hours between 7:30 AM and 7:30 PM, Monday through Saturday. • Loud construction activity within 100 feet of an academic building shall be scheduled to the extent feasible on weekends.
NOIS-2	Campus Standards shall be amended to include a requirement to be imposed on all campus contracts that only City-designated truck routes shall be used for contractor truck trips accessing the campus.
4.14 Utilities	
UTIL-4	The Campus will continue to improve its recycling and waste reduction programs and identify additional means of reducing waste.

2005 LRDP EIR Mitigation Measures Incorporated in the Proposed Project	
UTIL-9A	The Campus shall continue to implement and improve all current water conservation strategies to reduce demand for water, including the following: • Continue the leak detection and repair program. • Install an individual water meter in each new employee housing unit to encourage residential water conservation. • Install waterless urinals in all new buildings. • Require that new contracts for washing machines in student residences be certified by the Consortium on Energy Efficiency 6 to have a water factor of 5.5 or less or meet an equivalent standard. New washing machines purchased for use in athletic facilities shall meet applicable standards for water-efficiency for institutional machines. • Incorporate water-efficient landscaping practices in all new landscape installations. Water-conservative landscaping practices shall include, but will not be limited to the following: use of water-efficient plants, temporary irrigation systems for plant establishment areas where mature plants will be able to survive without regular irrigation, grouping of plants according to their water requirements, design of planting areas to maximize irrigation pattern efficiency, and mulch covering in planting areas. • To facilitate monitoring of water usage in all new development, the Campus shall: (1) install separate meters on water lines for individual buildings and (2) install meters on irrigation lines where one point of connection irrigates 1 acre or more.

Appendix C

Proposed Mitigation Monitoring Plan

PROPOSED MITIGATION MONITORING PROGRAMs

CEQA requires that the Lead Agency establish a program to report on and monitor measures adopted as part of the environmental review process to mitigate or avoid significant effects on the environment. This Mitigation Monitoring Program (MMP) is designed to ensure that the project-specific mitigation measures identified in this Initial Study are implemented. LRDP EIR Mitigation Measures applicable to the Projects are monitored through the Mitigation Monitoring and Reporting Program which was adopted by The Regents in conjunction with approval of the 2005 LRDP in 2006.

The MMPs for the proposed Recycling Yard and Bike Path Projects, as outlined in the following tables, describes monitoring and reporting procedures, monitoring responsibilities, and monitoring schedules for the project-specific mitigation measures identified in the Initial Study. Once completed, all monitoring actions will be reported in writing to or by the UC Santa Cruz Physical Planning and Construction, which will maintain mitigation-monitoring records for the proposed project. The MMP will be considered by the University in conjunction with project review and will be included as a condition of project approval.

The components of the MMP include:

a) **Mitigation Measure:** The mitigation measures provide mitigation for the proposed project.

b) **Monitoring and Reporting Procedure:** Identifies the actions that must be completed for the mitigation measures to be implemented.

c) **Mitigation Timing:** Identifies the timing for implementation of each action associated with the mitigation measures in order to effectively accomplish the intended outcome.

d)**Monitoring Responsibilities:** Identifies the UC Santa Cruz entity responsible for undertaking the required action and monitoring the mitigation measure.

Recycling Yard Project Mitigation Monitoring Program

Project-Specific Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing	Mitigation Responsibility
Recycling Yard Mitigation Measure AES-1: The building shall be oriented or configured to reduce the profile of the building as viewed from Oakes lower field and the upper part of the Great Meadow Bike path. • The color of the building materials shall be selected to blend with the surrounding landscape, as determined through visual simulations using possible alternative materials. • If programmatically feasible, the height of the roof line shall be varied, with the maximum height provided only in areas where required to accommodate tipping of front-loading trucks. • Tall shrubs and/or fast-growing trees such as *Cupresus*, *Myrica*, *Arbutus*, *Quercus*, or *Garrya* shall be planted as screening.	Prepare visual simulations of view of Project site from Oakes lower field and the Great Meadow Bike Path. Approval of construction documents shall be subject to approval of the Campus Architect and the Design Advisory Board.	Before the contract for Recycling Yard Phase 2 goes out to bid.	PP&C
Recycling Yard Mitigation AQ-1: UCSC Physical Plant shall prepare an Odor Impact Minimization Plan before a composting system is installed at the Recycling Yard and implement the Plan when the composting program begins operation. The Plan shall include the following items: • A complaint response protocol; • A description of design considerations and/or projected ranges of optimal operation to be employed in minimizing odor, including method and degree of aeration, moisture content of materials, airborne emission production, process water distribution, pad and site drainage and permeability, equipment reliability, personnel training, weather event impacts, utility service interruptions, and site specific concerns; and, • A description of operating procedures for minimizing odor, including aeration, moisture management, drainage controls, pad maintenance, wastewater pond controls, storage practices (e.g., storage time and pile geometry), contingency plans (i.e., equipment, water, power, and personnel), biofiltration, and tarping.	Prepare and implement odor minimization plan as detailed in the mitigation measures.	Before composting program begins operation, and during operation of the program.	Grounds Services
Recycling Yard Mitigation BIO-1: The Campus shall implement LRDP Mitigation Measure BIO-9 during construction of the Recycling Yard and Bike Path projects.	As specified in the LRDP EIR Mitigation Monitoring and Reporting Program.	Prior to and during construction.	PP&C

Project-Specific Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing	Mitigation Responsibility
Recycling Yard Mitigation BIO-2: Prior to project construction, a qualified biologist shall inspect the project work area and adjacent areas within 100 feet for badger dens. If an active badger den is found within the project footprint, CDFW will be contacted regarding the latest acceptable methods for den exclusion/excavation.	Campus contract with biologist to conduct surveys. Maintain survey report, any correspondence with CDFW, and documentation of den exclusion/excavation measures in the project file.	Prior to construction of Phase 1.	PP&C
Recycling Yard Mitigation NOISE-1: A building, masonry sound barrier, earthen landscaped berm, or berm/barrier combination shall be constructed surrounding the grinder, trommel, and loader to reduce noise associated with composting operations. The sound barrier shall be designed to break line-of-sight between exterior areas associated with the sensitive receptors and the composting operations. Such a barrier must be shown to reduce noise by 8 dBA at the temporary apprentice housing, 3 dBA at The Village, and 2 dBA at Ranch View Terrace.	Detailed design shall include the required barrier, and shall be accompanied by noise analysis documenting that the standard is met.	Before contract for construction of Phase 2 goes out to bid.	PP&C
Recycling Yard Mitigation NOISE-2: The composting operations and sort line shall be located at least 350 feet from the CASFS temporary apprentice housing, and/or additional sound barriers shall be constructed to reduce the average noise level at the temporary apprentice housing, with the project, to 55 dBA L_{dn}. Additional noise analysis shall be conducted during detailed design of the Recycling Yard Project Phase 2 to evaluate whether the proposed design meets this performance standard. The building location and layout and the design of the barriers shall be adjusted further as necessary to meet the performance standard.	Detailed design accompanied by noise analysis documenting that the standard is met.	Before contract for construction of Phase 2 goes out to bid.	PP&C
Recycling Yard Mitigation NOISE-3: The construction contractor shall provide a temporary **wooden** fence with a height that blocks the line-of-sight between the noise source and the temporary apprentice housing during construction of the Recycling Yard Phase 1 and Phase 2.	Include the requirement for a barrier in Division 1 of the construction contract.	Before contract	PP&C
Recycling Yard Mitigation TRA-1: The Campus shall complete construction of the Bike Path Project before Phase 2 of the Recycling Yard Project is completed.	Document that Bike Path Project has been completed.	Before completion of Phase 2 construction.	PP&C

Project-Specific Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing	Mitigation Responsibility
Recycling Yard Mitigation TRA-2: The Campus shall require that a flagger be provided to assist any truck with a trailer travelling to and from the Recycling Yard.	Include this requirement in training of staff working at the Recycling Yard.	During operation of the Recycling Yard Phase 2.	Grounds Services

Bike Path Project Mitigation Monitoring Program

Project-Specific Mitigation Measure	Monitoring and Reporting Procedure	Mitigation Timing	Mitigation Responsibility
Recycling Yard Mitigation BIO-1: The Campus shall implement LRDP Mitigation Measure BIO-9 during construction of the Recycling Yard and Bike Path projects.	As specified in the LRDP EIR Mitigation Monitoring and Reporting Program.	Prior to and during construction.	PP&C
Recycling Yard Mitigation BIO-2: Prior to project construction, a qualified biologist shall inspect the project work area and adjacent areas within 100 feet for badger dens. If an active badger den is found within the project footprint, CDFW will be contacted regarding the latest acceptable methods for den exclusion/excavation.	Campus contract with biologist to conduct surveys. Maintain survey report, any correspondence with CDFW, and documentation of den exclusion/excavation measures in the project file.	Prior to construction.	PP&C

Appendix D

Air Quality and Greenhouse Gas Emission Calculations

Appendix A

Air Quality and Greenhouse Gas Emissions Calculations

UCSC Bike Path

North Central Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	10.03	1000sqft	0.23	10,030.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.8	**Precipitation Freq (Days)**	53
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Post development area (impervious)

Construction Phase - Based on construction schedule provided

Off-road Equipment - 2/5/15 Construction Equip List

Off-road Equipment - Construction Equipment list

Off-road Equipment - Construction Equip list

Off-road Equipment - Construction equipment list E. Mowbray 1/26/2015

Off-road Equipment - Construction Equip list

Trips and VMT -

Grading - Prelim design set earthworks

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	2.00
tblConstructionPhase	NumDays	2.00	20.00
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	1.00	3.00
tblConstructionPhase	PhaseEndDate	9/14/2016	9/9/2016
tblConstructionPhase	PhaseEndDate	8/31/2016	8/17/2016
tblConstructionPhase	PhaseStartDate	8/18/2016	8/15/2016
tblConstructionPhase	PhaseStartDate	6/18/2016	6/20/2016
tblConstructionPhase	PhaseStartDate	7/21/2016	7/7/2016
tblGrading	AcresOfGrading	10.00	0.12
tblGrading	AcresOfGrading	1.50	0.12
tblGrading	MaterialImported	0.00	605.00
tblGrading	MaterialImported	0.00	605.00
tblOffRoadEquipment	HorsePower	8.00	125.00
tblOffRoadEquipment	HorsePower	199.00	9.00
tblOffRoadEquipment	LoadFactor	0.43	0.42
tblOffRoadEquipment	LoadFactor	0.36	0.56
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2017

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					
2016	0.1216	1.1941	0.7531	1.2300e-003	0.0151	0.0685	0.0836	6.1300e-003	0.0633	0.0695	0.0000	113.2416	113.2416	0.0299	0.0000	113.8690
Total	**0.1216**	**1.1941**	**0.7531**	**1.2300e-003**	**0.0151**	**0.0685**	**0.0836**	**6.1300e-003**	**0.0633**	**0.0695**	**0.0000**	**113.2416**	**113.2416**	**0.0299**	**0.0000**	**113.8690**

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					
2016	0.1216	1.1941	0.7531	1.2300e-003	0.0151	0.0685	0.0836	6.1300e-003	0.0633	0.0695	0.0000	113.2415	113.2415	0.0299	0.0000	113.8689
Total	**0.1216**	**1.1941**	**0.7531**	**1.2300e-003**	**0.0151**	**0.0685**	**0.0836**	**6.1300e-003**	**0.0633**	**0.0695**	**0.0000**	**113.2415**	**113.2415**	**0.0299**	**0.0000**	**113.8689**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0508	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0508**	**0.0000**	**9.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0000**	**1.9000e-004**

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	0.0508	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0508**	**0.0000**	**9.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0000**	**1.9000e-004**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/16/2016	6/17/2016	5	2	
2	Site Preparation	Site Preparation	6/20/2016	6/22/2016	5	3	
3	Grading	Grading	6/23/2016	7/20/2016	5	20	
4	Trenching	Trenching	7/7/2016	8/17/2016	5	30	
5	Paving	Paving	8/15/2016	9/9/2016	5	20	

Acres of Grading (Site Preparation Phase): 0.12

Acres of Grading (Grading Phase): 0.12

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Loaders	1	1.00	199	0.36
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Off-Highway Trucks	1	8.00	400	0.38
Site Preparation	Sweepers/Scrubbers	1	8.00	64	0.46
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Graders	1	8.00	174	0.41
Grading	Off-Highway Trucks	1	8.00	400	0.38
Grading	Plate Compactors	1	8.00	8	0.43
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Rubber Tired Loaders	1	8.00	199	0.36

Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Trenching	Excavators	1	8.00	162	0.38
Trenching	Forklifts	1	8.00	89	0.20
Trenching	Plate Compactors	1	8.00	125	0.42
Trenching	Rollers	1	8.00	80	0.38
Trenching	Rubber Tired Loaders	1	8.00	9	0.56
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Cement and Mortar Mixers	2	8.00	9	0.56
Paving	Graders	1	8.00	174	0.41
Paving	Off-Highway Trucks	1	8.00	400	0.38
Paving	Other Construction Equipment	1	8.00	171	0.42
Paving	Pavers	1	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Paving	Sweepers/Scrubbers	1	8.00	64	0.46
Paving	Tractors/Loaders/Backhoes	2	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
Demolition	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	10.00	0.00	76.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	23.00	0.00	76.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	11	28.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

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	1.2200e-003	0.0103	7.6200e-003	1.0000e-005		7.5000e-004	7.5000e-004		7.2000e-004	7.2000e-004	0.0000	1.0506	1.0506	2.1000e-004	0.0000	1.0550
Total	**1.2200e-003**	**0.0103**	**7.6200e-003**	**1.0000e-005**		**7.5000e-004**	**7.5000e-004**		**7.2000e-004**	**7.2000e-004**	**0.0000**	**1.0506**	**1.0506**	**2.1000e-004**	**0.0000**	**1.0550**

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	5.0000e-005	7.0000e-005	6.4000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0746	0.0746	1.0000e-005	0.0000	0.0748
Total	**5.0000e-005**	**7.0000e-005**	**6.4000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0746**	**0.0746**	**1.0000e-005**	**0.0000**	**0.0748**

3.2 Demolition - 2016

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	1.2200e-003	0.0103	7.6200e-003	1.0000e-005		7.5000e-004	7.5000e-004		7.2000e-004	7.2000e-004	0.0000	1.0506	1.0506	2.1000e-004	0.0000	1.0550
Total	**1.2200e-003**	**0.0103**	**7.6200e-003**	**1.0000e-005**		**7.5000e-004**	**7.5000e-004**		**7.2000e-004**	**7.2000e-004**	**0.0000**	**1.0506**	**1.0506**	**2.1000e-004**	**0.0000**	**1.0550**

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	5.0000e-005	7.0000e-005	6.4000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0746	0.0746	1.0000e-005	0.0000	0.0748
Total	**5.0000e-005**	**7.0000e-005**	**6.4000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0746**	**0.0746**	**1.0000e-005**	**0.0000**	**0.0748**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1000e-004	0.0000	1.1000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0600e-003	0.0418	0.0218	4.0000e-005		2.3100e-003	2.3100e-003		2.1200e-003	2.1200e-003	0.0000	3.5433	3.5433	1.0700e-003	0.0000	3.5658
Total	**4.0600e-003**	**0.0418**	**0.0218**	**4.0000e-005**	**1.1000e-004**	**2.3100e-003**	**2.4200e-003**	**1.0000e-005**	**2.1200e-003**	**2.1300e-003**	**0.0000**	**3.5433**	**3.5433**	**1.0700e-003**	**0.0000**	**3.5658**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.4000e-004	0.0103	0.0115	3.0000e-005	6.4000e-004	1.6000e-004	8.0000e-004	1.8000e-004	1.4000e-004	3.2000e-004	0.0000	2.5777	2.5777	2.0000e-005	0.0000	2.5781
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	1.1000e-004	9.7000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1120	0.1120	1.0000e-005	0.0000	0.1121
Total	**1.0100e-003**	**0.0104**	**0.0124**	**3.0000e-005**	**7.6000e-004**	**1.6000e-004**	**9.2000e-004**	**2.1000e-004**	**1.4000e-004**	**3.5000e-004**	**0.0000**	**2.6897**	**2.6897**	**3.0000e-005**	**0.0000**	**2.6902**

3.3 Site Preparation - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1000e-004	0.0000	1.1000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0600e-003	0.0418	0.0218	4.0000e-005		2.3100e-003	2.3100e-003		2.1200e-003	2.1200e-003	0.0000	3.5433	3.5433	1.0700e-003	0.0000	3.5658
Total	**4.0600e-003**	**0.0418**	**0.0218**	**4.0000e-005**	**1.1000e-004**	**2.3100e-003**	**2.4200e-003**	**1.0000e-005**	**2.1200e-003**	**2.1300e-003**	**0.0000**	**3.5433**	**3.5433**	**1.0700e-003**	**0.0000**	**3.5658**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.4000e-004	0.0103	0.0115	3.0000e-005	6.4000e-004	1.6000e-004	8.0000e-004	1.8000e-004	1.4000e-004	3.2000e-004	0.0000	2.5777	2.5777	2.0000e-005	0.0000	2.5781
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	1.1000e-004	9.7000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1120	0.1120	1.0000e-005	0.0000	0.1121
Total	**1.0100e-003**	**0.0104**	**0.0124**	**3.0000e-005**	**7.6000e-004**	**1.6000e-004**	**9.2000e-004**	**2.1000e-004**	**1.4000e-004**	**3.5000e-004**	**0.0000**	**2.6897**	**2.6897**	**3.0000e-005**	**0.0000**	**2.6902**

3.4 Grading - 2016

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					7.6400e-003	0.0000	7.6400e-003	4.1500e-003	0.0000	4.1500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0422	0.4254	0.2284	4.1000e-004		0.0232	0.0232		0.0217	0.0217	0.0000	37.5998	37.5998	0.0102	0.0000	37.8136
Total	**0.0422**	**0.4254**	**0.2284**	**4.1000e-004**	**7.6400e-003**	**0.0232**	**0.0309**	**4.1500e-003**	**0.0217**	**0.0258**	**0.0000**	**37.5998**	**37.5998**	**0.0102**	**0.0000**	**37.8136**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.4000e-004	0.0103	0.0115	3.0000e-005	6.4000e-004	1.6000e-004	8.0000e-004	1.8000e-004	1.4000e-004	3.2000e-004	0.0000	2.5777	2.5777	2.0000e-005	0.0000	2.5781
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	1.0800e-003	1.6500e-003	0.0148	2.0000e-005	1.8300e-003	2.0000e-005	1.8500e-003	4.9000e-004	2.0000e-005	5.0000e-004	0.0000	1.7166	1.7166	1.2000e-004	0.0000	1.7192
Total	**2.0200e-003**	**0.0119**	**0.0263**	**5.0000e-005**	**2.4700e-003**	**1.8000e-004**	**2.6500e-003**	**6.7000e-004**	**1.6000e-004**	**8.2000e-004**	**0.0000**	**4.2943**	**4.2943**	**1.4000e-004**	**0.0000**	**4.2973**

3.4 Grading - 2016

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					7.6400e-003	0.0000	7.6400e-003	4.1500e-003	0.0000	4.1500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0422	0.4254	0.2284	4.1000e-004		0.0232	0.0232		0.0217	0.0217	0.0000	37.5998	37.5998	0.0102	0.0000	37.8135
Total	**0.0422**	**0.4254**	**0.2284**	**4.1000e-004**	**7.6400e-003**	**0.0232**	**0.0309**	**4.1500e-003**	**0.0217**	**0.0258**	**0.0000**	**37.5998**	**37.5998**	**0.0102**	**0.0000**	**37.8135**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.4000e-004	0.0103	0.0115	3.0000e-005	6.4000e-004	1.6000e-004	8.0000e-004	1.8000e-004	1.4000e-004	3.2000e-004	0.0000	2.5777	2.5777	2.0000e-005	0.0000	2.5781
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	1.0800e-003	1.6500e-003	0.0148	2.0000e-005	1.8300e-003	2.0000e-005	1.8500e-003	4.9000e-004	2.0000e-005	5.0000e-004	0.0000	1.7166	1.7166	1.2000e-004	0.0000	1.7192
Total	**2.0200e-003**	**0.0119**	**0.0263**	**5.0000e-005**	**2.4700e-003**	**1.8000e-004**	**2.6500e-003**	**6.7000e-004**	**1.6000e-004**	**8.2000e-004**	**0.0000**	**4.2943**	**4.2943**	**1.4000e-004**	**0.0000**	**4.2973**

3.5 Trenching - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0194	0.1913	0.1368	1.9000e-004		0.0129	0.0129		0.0119	0.0119	0.0000	17.7554	17.7554	5.3600e-003	0.0000	17.8678
Total	**0.0194**	**0.1913**	**0.1368**	**1.9000e-004**		**0.0129**	**0.0129**		**0.0119**	**0.0119**	**0.0000**	**17.7554**	**17.7554**	**5.3600e-003**	**0.0000**	**17.8678**

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	1.0600e-003	1.6100e-003	0.0145	2.0000e-005	1.7900e-003	2.0000e-005	1.8100e-003	4.8000e-004	2.0000e-005	4.9000e-004	0.0000	1.6793	1.6793	1.2000e-004	0.0000	1.6818
Total	**1.0600e-003**	**1.6100e-003**	**0.0145**	**2.0000e-005**	**1.7900e-003**	**2.0000e-005**	**1.8100e-003**	**4.8000e-004**	**2.0000e-005**	**4.9000e-004**	**0.0000**	**1.6793**	**1.6793**	**1.2000e-004**	**0.0000**	**1.6818**

3.5 Trenching - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0194	0.1913	0.1368	1.9000e-004		0.0129	0.0129		0.0119	0.0119	0.0000	17.7553	17.7553	5.3600e-003	0.0000	17.8678
Total	**0.0194**	**0.1913**	**0.1368**	**1.9000e-004**		**0.0129**	**0.0129**		**0.0119**	**0.0119**	**0.0000**	**17.7553**	**17.7553**	**5.3600e-003**	**0.0000**	**17.8678**

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	1.0600e-003	1.6100e-003	0.0145	2.0000e-005	1.7900e-003	2.0000e-005	1.8100e-003	4.8000e-004	2.0000e-005	4.9000e-004	0.0000	1.6793	1.6793	1.2000e-004	0.0000	1.6818
Total	**1.0600e-003**	**1.6100e-003**	**0.0145**	**2.0000e-005**	**1.7900e-003**	**2.0000e-005**	**1.8100e-003**	**4.8000e-004**	**2.0000e-005**	**4.9000e-004**	**0.0000**	**1.6793**	**1.6793**	**1.2000e-004**	**0.0000**	**1.6818**

3.6 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0491	0.4994	0.2866	4.5000e-004		0.0289	0.0289		0.0266	0.0266	0.0000	42.4648	42.4648	0.0126	0.0000	42.7300
Paving	3.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0494**	**0.4994**	**0.2866**	**4.5000e-004**		**0.0289**	**0.0289**		**0.0266**	**0.0266**	**0.0000**	**42.4648**	**42.4648**	**0.0126**	**0.0000**	**42.7300**

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	1.3200e-003	2.0000e-003	0.0181	3.0000e-005	2.2300e-003	2.0000e-005	2.2500e-003	5.9000e-004	2.0000e-005	6.1000e-004	0.0000	2.0898	2.0898	1.5000e-004	0.0000	2.0929
Total	**1.3200e-003**	**2.0000e-003**	**0.0181**	**3.0000e-005**	**2.2300e-003**	**2.0000e-005**	**2.2500e-003**	**5.9000e-004**	**2.0000e-005**	**6.1000e-004**	**0.0000**	**2.0898**	**2.0898**	**1.5000e-004**	**0.0000**	**2.0929**

3.6 Paving - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0491	0.4994	0.2866	4.5000e-004		0.0289	0.0289		0.0266	0.0266	0.0000	42.4647	42.4647	0.0126	0.0000	42.7299
Paving	3.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0494**	**0.4994**	**0.2866**	**4.5000e-004**		**0.0289**	**0.0289**		**0.0266**	**0.0266**	**0.0000**	**42.4647**	**42.4647**	**0.0126**	**0.0000**	**42.7299**

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	1.3200e-003	2.0000e-003	0.0181	3.0000e-005	2.2300e-003	2.0000e-005	2.2500e-003	5.9000e-004	2.0000e-005	6.1000e-004	0.0000	2.0898	2.0898	1.5000e-004	0.0000	2.0929
Total	**1.3200e-003**	**2.0000e-003**	**0.0181**	**3.0000e-005**	**2.2300e-003**	**2.0000e-005**	**2.2500e-003**	**5.9000e-004**	**2.0000e-005**	**6.1000e-004**	**0.0000**	**2.0898**	**2.0898**	**1.5000e-004**	**0.0000**	**2.0929**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.464236	0.038779	0.210624	0.164455	0.051413	0.007282	0.016457	0.029840	0.003038	0.002180	0.008160	0.000830	0.002706

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0508	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Unmitigated	0.0508	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-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					
Consumer Products	0.0392					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	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Architectural Coating	0.0116					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0508**	**0.0000**	**9.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0000**	**1.9000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Landscaping	1.0000e-005	0.0000	9.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-004	1.8000e-004	0.0000	0.0000	1.9000e-004
Architectural Coating	0.0116					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0392					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0508**	**0.0000**	**9.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.0000**	**1.9000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation

UCSC Bike Path

North Central Coast Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	10.03	1000sqft	0.23	10,030.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.8	**Precipitation Freq (Days)**	53
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Post development area (impervious)

Construction Phase - Based on construction schedule provided

Off-road Equipment - 2/5/15 Construction Equip List

Off-road Equipment - Construction Equipment list

Off-road Equipment - Construction Equip list

Off-road Equipment - Construction equipment list E. Mowbray 1/26/2015

Off-road Equipment - Construction Equip list

Trips and VMT -

Grading - Prelim design set earthworks

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	2.00
tblConstructionPhase	NumDays	2.00	20.00
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	1.00	3.00
tblConstructionPhase	PhaseEndDate	9/14/2016	9/9/2016
tblConstructionPhase	PhaseEndDate	8/31/2016	8/17/2016
tblConstructionPhase	PhaseStartDate	8/18/2016	8/15/2016
tblConstructionPhase	PhaseStartDate	6/18/2016	6/20/2016
tblConstructionPhase	PhaseStartDate	7/21/2016	7/7/2016
tblGrading	AcresOfGrading	10.00	0.12
tblGrading	AcresOfGrading	1.50	0.12
tblGrading	MaterialImported	0.00	605.00
tblGrading	MaterialImported	0.00	605.00
tblOffRoadEquipment	HorsePower	8.00	125.00
tblOffRoadEquipment	HorsePower	199.00	9.00
tblOffRoadEquipment	LoadFactor	0.43	0.42
tblOffRoadEquipment	LoadFactor	0.36	0.56
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2017

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	6.4454	63.0284	40.7241	0.0623	1.1422	3.7547	4.3452	0.5161	3.4567	3.5504	0.0000	6,337.9991	6,337.9991	1.8106	0.0000	6,376.0221
Total	**6.4454**	**63.0284**	**40.7241**	**0.0623**	**1.1422**	**3.7547**	**4.3452**	**0.5161**	**3.4567**	**3.5504**	**0.0000**	**6,337.9991**	**6,337.9991**	**1.8106**	**0.0000**	**6,376.0221**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	6.4454	63.0284	40.7241	0.0623	1.1422	3.7547	4.3452	0.5161	3.4567	3.5504	0.0000	6,337.9991	6,337.9991	1.8106	0.0000	6,376.0221
Total	**6.4454**	**63.0284**	**40.7241**	**0.0623**	**1.1422**	**3.7547**	**4.3452**	**0.5161**	**3.4567**	**3.5504**	**0.0000**	**6,337.9991**	**6,337.9991**	**1.8106**	**0.0000**	**6,376.0221**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2784	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-003	2.2000e-003	1.0000e-005		2.3200e-003
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.2784**	**1.0000e-005**	**1.0400e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-003**	**2.2000e-003**	**1.0000e-005**		**2.3200e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2784	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-003	2.2000e-003	1.0000e-005		2.3200e-003
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.2784**	**1.0000e-005**	**1.0400e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-003**	**2.2000e-003**	**1.0000e-005**		**2.3200e-003**

	ROG	NOx	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	Demolition	Demolition	6/16/2016	6/17/2016	5	2	
2	Site Preparation	Site Preparation	6/20/2016	6/22/2016	5	3	
3	Grading	Grading	6/23/2016	7/20/2016	5	20	
4	Trenching	Trenching	7/7/2016	8/17/2016	5	30	
5	Paving	Paving	8/15/2016	9/9/2016	5	20	

Acres of Grading (Site Preparation Phase): 0.12

Acres of Grading (Grading Phase): 0.12

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Loaders	1	1.00	199	0.36
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Off-Highway Trucks	1	8.00	400	0.38
Site Preparation	Sweepers/Scrubbers	1	8.00	64	0.46

Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Graders	1	8.00	174	0.41
Grading	Off-Highway Trucks	1	8.00	400	0.38
Grading	Plate Compactors	1	8.00	8	0.43
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Rubber Tired Loaders	1	8.00	199	0.36
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Trenching	Excavators	1	8.00	162	0.38
Trenching	Forklifts	1	8.00	89	0.20
Trenching	Plate Compactors	1	8.00	125	0.42
Trenching	Rollers	1	8.00	80	0.38
Trenching	Rubber Tired Loaders	1	8.00	9	0.56
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Cement and Mortar Mixers	2	8.00	9	0.56
Paving	Graders	1	8.00	174	0.41
Paving	Off-Highway Trucks	1	8.00	400	0.38
Paving	Other Construction Equipment	1	8.00	171	0.42
Paving	Pavers	1	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Paving	Sweepers/Scrubbers	1	8.00	64	0.46
Paving	Tractors/Loaders/Backhoes	2	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
Demolition	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	10.00	0.00	76.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	23.00	0.00	76.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	11	28.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2199	10.3165	7.6246	0.0117		0.7509	0.7509		0.7186	0.7186		1,158.126 1	1,158.126 1	0.2279		1,162.912 4
Total	**1.2199**	**10.3165**	**7.6246**	**0.0117**		**0.7509**	**0.7509**		**0.7186**	**0.7186**		**1,158.126 1**	**1,158.126 1**	**0.2279**		**1,162.912 4**

3.2 Demolition - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0506	0.0785	0.6848	9.8000e-004	0.0822	8.2000e-004	0.0830	0.0218	7.5000e-004	0.0225		81.9213	81.9213	5.8300e-003		82.0438
Total	**0.0506**	**0.0785**	**0.6848**	**9.8000e-004**	**0.0822**	**8.2000e-004**	**0.0830**	**0.0218**	**7.5000e-004**	**0.0225**		**81.9213**	**81.9213**	**5.8300e-003**		**82.0438**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2199	10.3165	7.6246	0.0117		0.7509	0.7509		0.7186	0.7186	0.0000	1,158.1261	1,158.1261	0.2279		1,162.9124
Total	**1.2199**	**10.3165**	**7.6246**	**0.0117**		**0.7509**	**0.7509**		**0.7186**	**0.7186**	**0.0000**	**1,158.1261**	**1,158.1261**	**0.2279**		**1,162.9124**

3.2 Demolition - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0506	0.0785	0.6848	9.8000e-004	0.0822	8.2000e-004	0.0830	0.0218	7.5000e-004	0.0225		81.9213	81.9213	5.8300e-003		82.0438
Total	**0.0506**	**0.0785**	**0.6848**	**9.8000e-004**	**0.0822**	**8.2000e-004**	**0.0830**	**0.0218**	**7.5000e-004**	**0.0225**		**81.9213**	**81.9213**	**5.8300e-003**		**82.0438**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0736	0.0000	0.0736	9.3100e-003	0.0000	9.3100e-003			0.0000			0.0000
Off-Road	2.7076	27.8381	14.5018	0.0251		1.5395	1.5395		1.4163	1.4163		2,603.8845	2,603.8845	0.7854		2,620.3784
Total	**2.7076**	**27.8381**	**14.5018**	**0.0251**	**0.0736**	**1.5395**	**1.6131**	**9.3100e-003**	**1.4163**	**1.4256**		**2,603.8845**	**2,603.8845**	**0.7854**		**2,620.3784**

3.3 Site Preparation - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.6946	6.9456	9.5614	0.0189	0.4414	0.1053	0.5466	0.1209	0.0968	0.2177		1,891.7062	1,891.7062	0.0139		1,891.9987
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0506	0.0785	0.6848	9.8000e-004	0.0822	8.2000e-004	0.0830	0.0218	7.5000e-004	0.0225		81.9213	81.9213	5.8300e-003		82.0438
Total	**0.7453**	**7.0241**	**10.2461**	**0.0198**	**0.5235**	**0.1061**	**0.6296**	**0.1427**	**0.0976**	**0.2402**		**1,973.6275**	**1,973.6275**	**0.0198**		**1,974.0425**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0736	0.0000	0.0736	9.3100e-003	0.0000	9.3100e-003			0.0000			0.0000
Off-Road	2.7076	27.8381	14.5018	0.0251		1.5395	1.5395		1.4163	1.4163	0.0000	2,603.8845	2,603.8845	0.7854		2,620.3784
Total	**2.7076**	**27.8381**	**14.5018**	**0.0251**	**0.0736**	**1.5395**	**1.6131**	**9.3100e-003**	**1.4163**	**1.4256**	**0.0000**	**2,603.8845**	**2,603.8845**	**0.7854**		**2,620.3784**

3.3 Site Preparation - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.6946	6.9456	9.5614	0.0189	0.4414	0.1053	0.5466	0.1209	0.0968	0.2177		1,891.706 2	1,891.706 2	0.0139		1,891.998 7
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0506	0.0785	0.6848	9.8000e-004	0.0822	8.2000e-004	0.0830	0.0218	7.5000e-004	0.0225		81.9213	81.9213	5.8300e-003		82.0438
Total	**0.7453**	**7.0241**	**10.2461**	**0.0198**	**0.5235**	**0.1061**	**0.6296**	**0.1427**	**0.0976**	**0.2402**		**1,973.627 5**	**1,973.627 5**	**0.0198**		**1,974.042 5**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7638	0.0000	0.7638	0.4152	0.0000	0.4152			0.0000			0.0000
Off-Road	4.2163	42.5357	22.8391	0.0406		2.3229	2.3229		2.1657	2.1657		4,144.671 1	4,144.671 1	1.1220		4,168.232 0
Total	**4.2163**	**42.5357**	**22.8391**	**0.0406**	**0.7638**	**2.3229**	**3.0867**	**0.4152**	**2.1657**	**2.5808**		**4,144.671 1**	**4,144.671 1**	**1.1220**		**4,168.232 0**

3.4 Grading - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1042	1.0418	1.4342	2.8300e-003	0.0662	0.0158	0.0820	0.0181	0.0145	0.0327		283.7559	283.7559	2.0900e-003		283.7998
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1165	0.1804	1.5750	2.2600e-003	0.1889	1.8900e-003	0.1908	0.0501	1.7300e-003	0.0519		188.4190	188.4190	0.0134		188.7008
Total	**0.2207**	**1.2223**	**3.0092**	**5.0900e-003**	**0.2551**	**0.0177**	**0.2728**	**0.0683**	**0.0163**	**0.0845**		**472.1749**	**472.1749**	**0.0155**		**472.5006**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7638	0.0000	0.7638	0.4152	0.0000	0.4152			0.0000			0.0000
Off-Road	4.2163	42.5357	22.8391	0.0406		2.3229	2.3229		2.1657	2.1657	0.0000	4,144.671 1	4,144.671 1	1.1220		4,168.232 0
Total	**4.2163**	**42.5357**	**22.8391**	**0.0406**	**0.7638**	**2.3229**	**3.0867**	**0.4152**	**2.1657**	**2.5808**	**0.0000**	**4,144.671 1**	**4,144.671 1**	**1.1220**		**4,168.232 0**

3.4 Grading - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1042	1.0418	1.4342	2.8300e-003	0.0662	0.0158	0.0820	0.0181	0.0145	0.0327		283.7559	283.7559	2.0900e-003		283.7998
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1165	0.1804	1.5750	2.2600e-003	0.1889	1.8900e-003	0.1908	0.0501	1.7300e-003	0.0519		188.4190	188.4190	0.0134		188.7008
Total	**0.2207**	**1.2223**	**3.0092**	**5.0900e-003**	**0.2551**	**0.0177**	**0.2728**	**0.0683**	**0.0163**	**0.0845**		**472.1749**	**472.1749**	**0.0155**		**472.5006**

3.5 Trenching - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2925	12.7520	9.1176	0.0126		0.8612	0.8612		0.7923	0.7923		1,304.7953	1,304.7953	0.3936		1,313.0603
Total	**1.2925**	**12.7520**	**9.1176**	**0.0126**		**0.8612**	**0.8612**		**0.7923**	**0.7923**		**1,304.7953**	**1,304.7953**	**0.3936**		**1,313.0603**

3.5 Trenching - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0760	0.1177	1.0271	1.4800e-003	0.1232	1.2400e-003	0.1245	0.0327	1.1300e-003	0.0338		122.8820	122.8820	8.7500e-003		123.0658
Total	**0.0760**	**0.1177**	**1.0271**	**1.4800e-003**	**0.1232**	**1.2400e-003**	**0.1245**	**0.0327**	**1.1300e-003**	**0.0338**		**122.8820**	**122.8820**	**8.7500e-003**		**123.0658**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2925	12.7520	9.1176	0.0126		0.8612	0.8612		0.7923	0.7923	0.0000	1,304.7953	1,304.7953	0.3936		1,313.0603
Total	**1.2925**	**12.7520**	**9.1176**	**0.0126**		**0.8612**	**0.8612**		**0.7923**	**0.7923**	**0.0000**	**1,304.7953**	**1,304.7953**	**0.3936**		**1,313.0603**

3.5 Trenching - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0760	0.1177	1.0271	1.4800e-003	0.1232	1.2400e-003	0.1245	0.0327	1.1300e-003	0.0338		122.8820	122.8820	8.7500e-003		123.0658
Total	**0.0760**	**0.1177**	**1.0271**	**1.4800e-003**	**0.1232**	**1.2400e-003**	**0.1245**	**0.0327**	**1.1300e-003**	**0.0338**		**122.8820**	**122.8820**	**8.7500e-003**		**123.0658**

3.6 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.9050	49.9391	28.6621	0.0455		2.8900	2.8900		2.6612	2.6612		4,680.9423	4,680.9423	1.3920		4,710.1733
Paving	0.0301					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.9351**	**49.9391**	**28.6621**	**0.0455**		**2.8900**	**2.8900**		**2.6612**	**2.6612**		**4,680.9423**	**4,680.9423**	**1.3920**		**4,710.1733**

3.6 Paving - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1418	0.2197	1.9173	2.7500e-003	0.2300	2.3100e-003	0.2323	0.0610	2.1100e-003	0.0631		229.3797	229.3797	0.0163		229.7228
Total	**0.1418**	**0.2197**	**1.9173**	**2.7500e-003**	**0.2300**	**2.3100e-003**	**0.2323**	**0.0610**	**2.1100e-003**	**0.0631**		**229.3797**	**229.3797**	**0.0163**		**229.7228**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.9050	49.9391	28.6621	0.0455		2.8900	2.8900		2.6612	2.6612	0.0000	4,680.9423	4,680.9423	1.3920		4,710.1733
Paving	0.0301					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.9351**	**49.9391**	**28.6621**	**0.0455**		**2.8900**	**2.8900**		**2.6612**	**2.6612**	**0.0000**	**4,680.9423**	**4,680.9423**	**1.3920**		**4,710.1733**

3.6 Paving - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1418	0.2197	1.9173	2.7500e-003	0.2300	2.3100e-003	0.2323	0.0610	2.1100e-003	0.0631		229.3797	229.3797	0.0163		229.7228
Total	**0.1418**	**0.2197**	**1.9173**	**2.7500e-003**	**0.2300**	**2.3100e-003**	**0.2323**	**0.0610**	**2.1100e-003**	**0.0631**		**229.3797**	**229.3797**	**0.0163**		**229.7228**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.464236	0.038779	0.210624	0.164455	0.051413	0.007282	0.016457	0.029840	0.003038	0.002180	0.008160	0.000830	0.002706

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

6.0 Area Detail

6.1 Mitigation Measures Area

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Mitigated	0.2784	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-003	2.2000e-003	1.0000e-005		2.3200e-003
Unmitigated	0.2784	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-003	2.2000e-003	1.0000e-005		2.3200e-003

6.2 Area by SubCategory

Unmitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Consumer Products	0.2146					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-004	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-003	2.2000e-003	1.0000e-005		2.3200e-003
Architectural Coating	0.0637					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2784**	**1.0000e-005**	**1.0400e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-003**	**2.2000e-003**	**1.0000e-005**		**2.3200e-003**

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	lb/day										lb/day					
Landscaping	1.0000e-004	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-003	2.2000e-003	1.0000e-005		2.3200e-003
Architectural Coating	0.0637					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2146					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2784**	**1.0000e-005**	**1.0400e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-003**	**2.2000e-003**	**1.0000e-005**		**2.3200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

UCSC Bike Path

North Central Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	10.03	1000sqft	0.23	10,030.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.8 **Precipitation Freq (Days)** 53

Climate Zone 5 **Operational Year** 2017

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 641.35 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Post development area (impervious)

Construction Phase - Based on construction schedule provided

Off-road Equipment - 2/5/15 Construction Equip List

Off-road Equipment - Construction Equipment list

Off-road Equipment - Construction Equip list

Off-road Equipment - Construction equipment list E. Mowbray 1/26/2015

Off-road Equipment - Construction Equip list

Trips and VMT -

Grading - Prelim design set earthworks

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	2.00
tblConstructionPhase	NumDays	2.00	20.00
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	1.00	3.00
tblConstructionPhase	PhaseEndDate	9/14/2016	9/9/2016
tblConstructionPhase	PhaseEndDate	8/31/2016	8/17/2016
tblConstructionPhase	PhaseStartDate	8/18/2016	8/15/2016
tblConstructionPhase	PhaseStartDate	6/18/2016	6/20/2016
tblConstructionPhase	PhaseStartDate	7/21/2016	7/7/2016
tblGrading	AcresOfGrading	10.00	0.12
tblGrading	AcresOfGrading	1.50	0.12
tblGrading	MaterialImported	0.00	605.00
tblGrading	MaterialImported	0.00	605.00
tblOffRoadEquipment	HorsePower	8.00	125.00
tblOffRoadEquipment	HorsePower	199.00	9.00
tblOffRoadEquipment	LoadFactor	0.43	0.42
tblOffRoadEquipment	LoadFactor	0.36	0.56
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2017

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	6.4317	62.9601	40.6018	0.0625	1.1422	3.7547	4.3452	0.5161	3.4567	3.5504	0.0000	6,359.838 7	6,359.838 7	1.8106	0.0000	6,397.861 6
Total	**6.4317**	**62.9601**	**40.6018**	**0.0625**	**1.1422**	**3.7547**	**4.3452**	**0.5161**	**3.4567**	**3.5504**	**0.0000**	**6,359.838 7**	**6,359.838 7**	**1.8106**	**0.0000**	**6,397.861 6**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	6.4317	62.9601	40.6018	0.0625	1.1422	3.7547	4.3452	0.5161	3.4567	3.5504	0.0000	6,359.838 7	6,359.838 7	1.8106	0.0000	6,397.861 6
Total	**6.4317**	**62.9601**	**40.6018**	**0.0625**	**1.1422**	**3.7547**	**4.3452**	**0.5161**	**3.4567**	**3.5504**	**0.0000**	**6,359.838 7**	**6,359.838 7**	**1.8106**	**0.0000**	**6,397.861 6**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2784	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-003	2.2000e-003	1.0000e-005		2.3200e-003
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.2784**	**1.0000e-005**	**1.0400e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-003**	**2.2000e-003**	**1.0000e-005**		**2.3200e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2784	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-003	2.2000e-003	1.0000e-005		2.3200e-003
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.2784**	**1.0000e-005**	**1.0400e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-003**	**2.2000e-003**	**1.0000e-005**		**2.3200e-003**

	ROG	NOx	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	Demolition	Demolition	6/16/2016	6/17/2016	5	2	
2	Site Preparation	Site Preparation	6/20/2016	6/22/2016	5	3	
3	Grading	Grading	6/23/2016	7/20/2016	5	20	
4	Trenching	Trenching	7/7/2016	8/17/2016	5	30	
5	Paving	Paving	8/15/2016	9/9/2016	5	20	

Acres of Grading (Site Preparation Phase): 0.12

Acres of Grading (Grading Phase): 0.12

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Loaders	1	1.00	199	0.36
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Off-Highway Trucks	1	8.00	400	0.38
Site Preparation	Sweepers/Scrubbers	1	8.00	64	0.46

Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Graders	1	8.00	174	0.41
Grading	Off-Highway Trucks	1	8.00	400	0.38
Grading	Plate Compactors	1	8.00	8	0.43
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Rubber Tired Loaders	1	8.00	199	0.36
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Trenching	Excavators	1	8.00	162	0.38
Trenching	Forklifts	1	8.00	89	0.20
Trenching	Plate Compactors	1	8.00	125	0.42
Trenching	Rollers	1	8.00	80	0.38
Trenching	Rubber Tired Loaders	1	8.00	9	0.56
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Paving	Cement and Mortar Mixers	2	8.00	9	0.56
Paving	Graders	1	8.00	174	0.41
Paving	Off-Highway Trucks	1	8.00	400	0.38
Paving	Other Construction Equipment	1	8.00	171	0.42
Paving	Pavers	1	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Paving	Sweepers/Scrubbers	1	8.00	64	0.46
Paving	Tractors/Loaders/Backhoes	2	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
Demolition	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	10.00	0.00	76.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	23.00	0.00	76.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	11	28.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2199	10.3165	7.6246	0.0117		0.7509	0.7509		0.7186	0.7186		1,158.126 1	1,158.126 1	0.2279		1,162.912 4
Total	**1.2199**	**10.3165**	**7.6246**	**0.0117**		**0.7509**	**0.7509**		**0.7186**	**0.7186**		**1,158.126 1**	**1,158.126 1**	**0.2279**		**1,162.912 4**

3.2 Demolition - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0475	0.0626	0.6563	1.0400e-003	0.0822	8.2000e-004	0.0830	0.0218	7.5000e-004	0.0225		87.0003	87.0003	5.8300e-003		87.1228
Total	**0.0475**	**0.0626**	**0.6563**	**1.0400e-003**	**0.0822**	**8.2000e-004**	**0.0830**	**0.0218**	**7.5000e-004**	**0.0225**		**87.0003**	**87.0003**	**5.8300e-003**		**87.1228**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2199	10.3165	7.6246	0.0117		0.7509	0.7509		0.7186	0.7186	0.0000	1,158.1261	1,158.1261	0.2279		1,162.9124
Total	**1.2199**	**10.3165**	**7.6246**	**0.0117**		**0.7509**	**0.7509**		**0.7186**	**0.7186**	**0.0000**	**1,158.1261**	**1,158.1261**	**0.2279**		**1,162.9124**

3.2 Demolition - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0475	0.0626	0.6563	1.0400e-003	0.0822	8.2000e-004	0.0830	0.0218	7.5000e-004	0.0225		87.0003	87.0003	5.8300e-003		87.1228
Total	**0.0475**	**0.0626**	**0.6563**	**1.0400e-003**	**0.0822**	**8.2000e-004**	**0.0830**	**0.0218**	**7.5000e-004**	**0.0225**		**87.0003**	**87.0003**	**5.8300e-003**		**87.1228**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0736	0.0000	0.0736	9.3100e-003	0.0000	9.3100e-003			0.0000			0.0000
Off-Road	2.7076	27.8381	14.5018	0.0251		1.5395	1.5395		1.4163	1.4163		2,603.8845	2,603.8845	0.7854		2,620.3784
Total	**2.7076**	**27.8381**	**14.5018**	**0.0251**	**0.0736**	**1.5395**	**1.6131**	**9.3100e-003**	**1.4163**	**1.4256**		**2,603.8845**	**2,603.8845**	**0.7854**		**2,620.3784**

3.3 Site Preparation - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.5635	6.5797	5.8728	0.0188	0.4414	0.1049	0.5463	0.1209	0.0965	0.2173		1,896.179 0	1,896.179 0	0.0137		1,896.467 4
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0475	0.0626	0.6563	1.0400e-003	0.0822	8.2000e-004	0.0830	0.0218	7.5000e-004	0.0225		87.0003	87.0003	5.8300e-003		87.1228
Total	**0.6110**	**6.6423**	**6.5291**	**0.0199**	**0.5235**	**0.1057**	**0.6292**	**0.1427**	**0.0972**	**0.2399**		**1,983.179 2**	**1,983.179 2**	**0.0196**		**1,983.590 2**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0736	0.0000	0.0736	9.3100e-003	0.0000	9.3100e-003			0.0000			0.0000
Off-Road	2.7076	27.8381	14.5018	0.0251		1.5395	1.5395		1.4163	1.4163	0.0000	2,603.884 5	2,603.884 5	0.7854		2,620.378 4
Total	**2.7076**	**27.8381**	**14.5018**	**0.0251**	**0.0736**	**1.5395**	**1.6131**	**9.3100e-003**	**1.4163**	**1.4256**	**0.0000**	**2,603.884 5**	**2,603.884 5**	**0.7854**		**2,620.378 4**

3.3 Site Preparation - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.5635	6.5797	5.8728	0.0188	0.4414	0.1049	0.5463	0.1209	0.0965	0.2173		1,896.179 0	1,896.179 0	0.0137		1,896.467 4
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0475	0.0626	0.6563	1.0400e-003	0.0822	8.2000e-004	0.0830	0.0218	7.5000e-004	0.0225		87.0003	87.0003	5.8300e-003		87.1228
Total	**0.6110**	**6.6423**	**6.5291**	**0.0199**	**0.5235**	**0.1057**	**0.6292**	**0.1427**	**0.0972**	**0.2399**		**1,983.179 2**	**1,983.179 2**	**0.0196**		**1,983.590 2**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7638	0.0000	0.7638	0.4152	0.0000	0.4152			0.0000			0.0000
Off-Road	4.2163	42.5357	22.8391	0.0406		2.3229	2.3229		2.1657	2.1657		4,144.671 1	4,144.671 1	1.1220		4,168.232 0
Total	**4.2163**	**42.5357**	**22.8391**	**0.0406**	**0.7638**	**2.3229**	**3.0867**	**0.4152**	**2.1657**	**2.5808**		**4,144.671 1**	**4,144.671 1**	**1.1220**		**4,168.232 0**

3.4 Grading - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0845	0.9870	0.8809	2.8200e-003	0.0662	0.0157	0.0819	0.0181	0.0145	0.0326		284.4268	284.4268	2.0600e-003		284.4701
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1092	0.1439	1.5095	2.4000e-003	0.1889	1.8900e-003	0.1908	0.0501	1.7300e-003	0.0519		200.1006	200.1006	0.0134		200.3825
Total	**0.1937**	**1.1309**	**2.3904**	**5.2200e-003**	**0.2551**	**0.0176**	**0.2728**	**0.0683**	**0.0162**	**0.0845**		**484.5275**	**484.5275**	**0.0155**		**484.8526**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7638	0.0000	0.7638	0.4152	0.0000	0.4152			0.0000			0.0000
Off-Road	4.2163	42.5357	22.8391	0.0406		2.3229	2.3229		2.1657	2.1657	0.0000	4,144.6711	4,144.6711	1.1220		4,168.2320
Total	**4.2163**	**42.5357**	**22.8391**	**0.0406**	**0.7638**	**2.3229**	**3.0867**	**0.4152**	**2.1657**	**2.5808**	**0.0000**	**4,144.6711**	**4,144.6711**	**1.1220**		**4,168.2320**

3.4 Grading - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0845	0.9870	0.8809	2.8200e-003	0.0662	0.0157	0.0819	0.0181	0.0145	0.0326		284.4268	284.4268	2.0600e-003		284.4701
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1092	0.1439	1.5095	2.4000e-003	0.1889	1.8900e-003	0.1908	0.0501	1.7300e-003	0.0519		200.1006	200.1006	0.0134		200.3825
Total	**0.1937**	**1.1309**	**2.3904**	**5.2200e-003**	**0.2551**	**0.0176**	**0.2728**	**0.0683**	**0.0162**	**0.0845**		**484.5275**	**484.5275**	**0.0155**		**484.8526**

3.5 Trenching - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2925	12.7520	9.1176	0.0126		0.8612	0.8612		0.7923	0.7923		1,304.7953	1,304.7953	0.3936		1,313.0603
Total	**1.2925**	**12.7520**	**9.1176**	**0.0126**		**0.8612**	**0.8612**		**0.7923**	**0.7923**		**1,304.7953**	**1,304.7953**	**0.3936**		**1,313.0603**

3.5 Trenching - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0712	0.0939	0.9845	1.5700e-003	0.1232	1.2400e-003	0.1245	0.0327	1.1300e-003	0.0338		130.5004	130.5004	8.7500e-003		130.6842
Total	**0.0712**	**0.0939**	**0.9845**	**1.5700e-003**	**0.1232**	**1.2400e-003**	**0.1245**	**0.0327**	**1.1300e-003**	**0.0338**		**130.5004**	**130.5004**	**8.7500e-003**		**130.6842**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2925	12.7520	9.1176	0.0126		0.8612	0.8612		0.7923	0.7923	0.0000	1,304.7953	1,304.7953	0.3936		1,313.0603
Total	**1.2925**	**12.7520**	**9.1176**	**0.0126**		**0.8612**	**0.8612**		**0.7923**	**0.7923**	**0.0000**	**1,304.7953**	**1,304.7953**	**0.3936**		**1,313.0603**

3.5 Trenching - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0712	0.0939	0.9845	1.5700e-003	0.1232	1.2400e-003	0.1245	0.0327	1.1300e-003	0.0338		130.5004	130.5004	8.7500e-003		130.6842
Total	**0.0712**	**0.0939**	**0.9845**	**1.5700e-003**	**0.1232**	**1.2400e-003**	**0.1245**	**0.0327**	**1.1300e-003**	**0.0338**		**130.5004**	**130.5004**	**8.7500e-003**		**130.6842**

3.6 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.9050	49.9391	28.6621	0.0455		2.8900	2.8900		2.6612	2.6612		4,680.942 3	4,680.942 3	1.3920		4,710.173 3
Paving	0.0301					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.9351**	**49.9391**	**28.6621**	**0.0455**		**2.8900**	**2.8900**		**2.6612**	**2.6612**		**4,680.942 3**	**4,680.942 3**	**1.3920**		**4,710.173 3**

3.6 Paving - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1329	0.1752	1.8377	2.9200e-003	0.2300	2.3100e-003	0.2323	0.0610	2.1100e-003	0.0631		243.6008	243.6008	0.0163		243.9439
Total	**0.1329**	**0.1752**	**1.8377**	**2.9200e-003**	**0.2300**	**2.3100e-003**	**0.2323**	**0.0610**	**2.1100e-003**	**0.0631**		**243.6008**	**243.6008**	**0.0163**		**243.9439**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.9050	49.9391	28.6621	0.0455		2.8900	2.8900		2.6612	2.6612	0.0000	4,680.9423	4,680.9423	1.3920		4,710.1733
Paving	0.0301					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.9351**	**49.9391**	**28.6621**	**0.0455**		**2.8900**	**2.8900**		**2.6612**	**2.6612**	**0.0000**	**4,680.9423**	**4,680.9423**	**1.3920**		**4,710.1733**

3.6 Paving - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1329	0.1752	1.8377	2.9200e-003	0.2300	2.3100e-003	0.2323	0.0610	2.1100e-003	0.0631		243.6008	243.6008	0.0163		243.9439
Total	**0.1329**	**0.1752**	**1.8377**	**2.9200e-003**	**0.2300**	**2.3100e-003**	**0.2323**	**0.0610**	**2.1100e-003**	**0.0631**		**243.6008**	**243.6008**	**0.0163**		**243.9439**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.464236	0.038779	0.210624	0.164455	0.051413	0.007282	0.016457	0.029840	0.003038	0.002180	0.008160	0.000830	0.002706

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2784	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-003	2.2000e-003	1.0000e-005		2.3200e-003
Unmitigated	0.2784	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-003	2.2000e-003	1.0000e-005		2.3200e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	0.2146					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-004	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-003	2.2000e-003	1.0000e-005		2.3200e-003
Architectural Coating	0.0637					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2784**	**1.0000e-005**	**1.0400e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-003**	**2.2000e-003**	**1.0000e-005**		**2.3200e-003**

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	lb/day										lb/day					
Landscaping	1.0000e-004	1.0000e-005	1.0400e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-003	2.2000e-003	1.0000e-005		2.3200e-003
Architectural Coating	0.0637					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2146					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2784**	**1.0000e-005**	**1.0400e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-003**	**2.2000e-003**	**1.0000e-005**		**2.3200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

UCSC Recycling Yard Phase 1

North Central Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	40.00	1000sqft	0.92	40,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.8	**Precipitation Freq (Days)**	53
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 25,000 sf of compacted aggregate base for construction and demolition activities, bin and equipment storage, and access, and 15,000 sf of compacted earth for greenwaste and landscape supply storage

Construction Phase - Based on construction schedule provided

Off-road Equipment - Equipment list 2/5/15

Off-road Equipment - Construction Equipment list

Off-road Equipment - Construction Equip list

Off-road Equipment - Construction equipment list E. Mowbray 2/5/2015

Off-road Equipment - Construction Equip list

Trips and VMT -

Grading - Prelim design set earthworks

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	2.00
tblConstructionPhase	NumDays	2.00	20.00
tblConstructionPhase	NumDays	1.00	3.00
tblConstructionPhase	PhaseEndDate	8/31/2016	8/17/2016
tblConstructionPhase	PhaseStartDate	6/18/2016	6/20/2016
tblConstructionPhase	PhaseStartDate	7/21/2016	7/7/2016
tblGrading	AcresOfGrading	30.00	7.00
tblGrading	MaterialExported	0.00	3,140.00
tblGrading	MaterialImported	0.00	2,425.00
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.48	0.48
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.41	0.41

tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Scrapers
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Concrete/Industrial Saws	Graders
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Sweepers/Scrubbers
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	WorkerTripNumber	13.00	10.00
tblTripsAndVMT	WorkerTripNumber	10.00	5.00
tblTripsAndVMT	WorkerTripNumber	25.00	23.00

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					
2016	0.1135	1.1815	0.7830	1.3600e-003	0.0231	0.0598	0.0828	7.5600e-003	0.0553	0.0629	0.0000	125.1701	125.1701	0.0283	0.0000	125.7650
Total	**0.1135**	**1.1815**	**0.7830**	**1.3600e-003**	**0.0231**	**0.0598**	**0.0828**	**7.5600e-003**	**0.0553**	**0.0629**	**0.0000**	**125.1701**	**125.1701**	**0.0283**	**0.0000**	**125.7650**

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					
2016	0.1135	1.1815	0.7830	1.3600e-003	0.0231	0.0598	0.0828	7.5600e-003	0.0553	0.0629	0.0000	125.1700	125.1700	0.0283	0.0000	125.7648
Total	**0.1135**	**1.1815**	**0.7830**	**1.3600e-003**	**0.0231**	**0.0598**	**0.0828**	**7.5600e-003**	**0.0553**	**0.0629**	**0.0000**	**125.1700**	**125.1700**	**0.0283**	**0.0000**	**125.7648**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2026	0.0000	3.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.1000e-004	7.1000e-004	0.0000	0.0000	7.6000e-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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2026**	**0.0000**	**3.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**7.1000e-004**	**7.1000e-004**	**0.0000**	**0.0000**	**7.6000e-004**

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	0.2026	0.0000	3.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.1000e-004	7.1000e-004	0.0000	0.0000	7.6000e-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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2026**	**0.0000**	**3.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**7.1000e-004**	**7.1000e-004**	**0.0000**	**0.0000**	**7.6000e-004**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/16/2016	6/17/2016	5	2	
2	Site Preparation	Site Preparation	6/20/2016	6/22/2016	5	3	
3	Grading	Grading	6/23/2016	7/20/2016	5	20	
4	Trenching	Trenching	7/7/2016	8/17/2016	5	30	

Acres of Grading (Site Preparation Phase): 1.5

Acres of Grading (Grading Phase): 7

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Loaders	1	1.00	199	0.36
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Scrapers	1	8.00	361	0.48
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Off-Highway Trucks	1	8.00	400	0.38
Grading	Plate Compactors	1	8.00	8	0.43
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Trenching	Rubber Tired Loaders	1	8.00	199	0.36
Trenching	Excavators	2	8.00	162	0.38
Grading	Rubber Tired Loaders	1	8.00	199	0.36
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Plate Compactors	2	8.00	8	0.43
Trenching	Rollers	1	8.00	80	0.38
Trenching	Forklifts	1	8.00	89	0.20
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Graders	1	8.00	174	0.41
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Site Preparation	Off-Highway Trucks	1	8.00	400	0.38
Site Preparation	Sweepers/Scrubbers	1	8.00	64	0.46

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
Demolition	5	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	10	23.00	0.00	696.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

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	1.3700e-003	0.0121	8.9300e-003	1.0000e-005		8.3000e-004	8.3000e-004		7.9000e-004	7.9000e-004	0.0000	1.1550	1.1550	2.4000e-004	0.0000	1.1600
Total	**1.3700e-003**	**0.0121**	**8.9300e-003**	**1.0000e-005**		**8.3000e-004**	**8.3000e-004**		**7.9000e-004**	**7.9000e-004**	**0.0000**	**1.1550**	**1.1550**	**2.4000e-004**	**0.0000**	**1.1600**

3.2 Demolition - 2016

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	5.0000e-005	7.0000e-005	6.4000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0746	0.0746	1.0000e-005	0.0000	0.0748
Total	**5.0000e-005**	**7.0000e-005**	**6.4000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0746**	**0.0746**	**1.0000e-005**	**0.0000**	**0.0748**

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	1.3700e-003	0.0121	8.9300e-003	1.0000e-005		8.3000e-004	8.3000e-004		7.9000e-004	7.9000e-004	0.0000	1.1550	1.1550	2.4000e-004	0.0000	1.1600
Total	**1.3700e-003**	**0.0121**	**8.9300e-003**	**1.0000e-005**		**8.3000e-004**	**8.3000e-004**		**7.9000e-004**	**7.9000e-004**	**0.0000**	**1.1550**	**1.1550**	**2.4000e-004**	**0.0000**	**1.1600**

3.2 Demolition - 2016

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	5.0000e-005	7.0000e-005	6.4000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0746	0.0746	1.0000e-005	0.0000	0.0748
Total	**5.0000e-005**	**7.0000e-005**	**6.4000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0746**	**0.0746**	**1.0000e-005**	**0.0000**	**0.0748**

3.3 Site Preparation - 2016

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					8.0000e-004	0.0000	8.0000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0600e-003	0.0418	0.0218	4.0000e-005		2.3100e-003	2.3100e-003		2.1200e-003	2.1200e-003	0.0000	3.5433	3.5433	1.0700e-003	0.0000	3.5658
Total	**4.0600e-003**	**0.0418**	**0.0218**	**4.0000e-005**	**8.0000e-004**	**2.3100e-003**	**3.1100e-003**	**9.0000e-005**	**2.1200e-003**	**2.2100e-003**	**0.0000**	**3.5433**	**3.5433**	**1.0700e-003**	**0.0000**	**3.5658**

3.3 Site Preparation - 2016

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	4.0000e-005	5.0000e-005	4.8000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0560	0.0560	0.0000	0.0000	0.0561
Total	**4.0000e-005**	**5.0000e-005**	**4.8000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0560**	**0.0560**	**0.0000**	**0.0000**	**0.0561**

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					8.0000e-004	0.0000	8.0000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0600e-003	0.0418	0.0218	4.0000e-005		2.3100e-003	2.3100e-003		2.1200e-003	2.1200e-003	0.0000	3.5433	3.5433	1.0700e-003	0.0000	3.5658
Total	**4.0600e-003**	**0.0418**	**0.0218**	**4.0000e-005**	**8.0000e-004**	**2.3100e-003**	**3.1100e-003**	**9.0000e-005**	**2.1200e-003**	**2.2100e-003**	**0.0000**	**3.5433**	**3.5433**	**1.0700e-003**	**0.0000**	**3.5658**

3.3 Site Preparation - 2016

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	4.0000e-005	5.0000e-005	4.8000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0560	0.0560	0.0000	0.0000	0.0561
Total	**4.0000e-005**	**5.0000e-005**	**4.8000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0560**	**0.0560**	**0.0000**	**0.0000**	**0.0561**

3.4 Grading - 2016

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					0.0117	0.0000	0.0117	4.6000e-003	0.0000	4.6000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0577	0.6184	0.3510	5.7000e-004		0.0316	0.0316		0.0293	0.0293	0.0000	53.2021	53.2021	0.0149	0.0000	53.5147
Total	**0.0577**	**0.6184**	**0.3510**	**5.7000e-004**	**0.0117**	**0.0316**	**0.0432**	**4.6000e-003**	**0.0293**	**0.0339**	**0.0000**	**53.2021**	**53.2021**	**0.0149**	**0.0000**	**53.5147**

3.4 Grading - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5900e-003	0.0940	0.1049	2.6000e-004	5.9000e-003	1.4400e-003	7.3400e-003	1.6200e-003	1.3300e-003	2.9500e-003	0.0000	23.6065	23.6065	1.7000e-004	0.0000	23.6101
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	1.0800e-003	1.6500e-003	0.0148	2.0000e-005	1.8300e-003	2.0000e-005	1.8500e-003	4.9000e-004	2.0000e-005	5.0000e-004	0.0000	1.7166	1.7166	1.2000e-004	0.0000	1.7192
Total	**9.6700e-003**	**0.0956**	**0.1197**	**2.8000e-004**	**7.7300e-003**	**1.4600e-003**	**9.1900e-003**	**2.1100e-003**	**1.3500e-003**	**3.4500e-003**	**0.0000**	**25.3231**	**25.3231**	**2.9000e-004**	**0.0000**	**25.3293**

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					0.0117	0.0000	0.0117	4.6000e-003	0.0000	4.6000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0577	0.6184	0.3510	5.7000e-004		0.0316	0.0316		0.0293	0.0293	0.0000	53.2021	53.2021	0.0149	0.0000	53.5146
Total	**0.0577**	**0.6184**	**0.3510**	**5.7000e-004**	**0.0117**	**0.0316**	**0.0432**	**4.6000e-003**	**0.0293**	**0.0339**	**0.0000**	**53.2021**	**53.2021**	**0.0149**	**0.0000**	**53.5146**

3.4 Grading - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5900e-003	0.0940	0.1049	2.6000e-004	5.9000e-003	1.4400e-003	7.3400e-003	1.6200e-003	1.3300e-003	2.9500e-003	0.0000	23.6065	23.6065	1.7000e-004	0.0000	23.6101
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	1.0800e-003	1.6500e-003	0.0148	2.0000e-005	1.8300e-003	2.0000e-005	1.8500e-003	4.9000e-004	2.0000e-005	5.0000e-004	0.0000	1.7166	1.7166	1.2000e-004	0.0000	1.7192
Total	**9.6700e-003**	**0.0956**	**0.1197**	**2.8000e-004**	**7.7300e-003**	**1.4600e-003**	**9.1900e-003**	**2.1100e-003**	**1.3500e-003**	**3.4500e-003**	**0.0000**	**25.3231**	**25.3231**	**2.9000e-004**	**0.0000**	**25.3293**

3.5 Trenching - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0390	0.4111	0.2582	4.2000e-004		0.0236	0.0236		0.0217	0.0217	0.0000	39.2411	39.2411	0.0117	0.0000	39.4857
Total	**0.0390**	**0.4111**	**0.2582**	**4.2000e-004**		**0.0236**	**0.0236**		**0.0217**	**0.0217**	**0.0000**	**39.2411**	**39.2411**	**0.0117**	**0.0000**	**39.4857**

3.5 Trenching - 2016

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	1.6200e-003	2.4700e-003	0.0223	3.0000e-005	2.7400e-003	3.0000e-005	2.7700e-003	7.3000e-004	3.0000e-005	7.6000e-004	0.0000	2.5749	2.5749	1.8000e-004	0.0000	2.5787
Total	**1.6200e-003**	**2.4700e-003**	**0.0223**	**3.0000e-005**	**2.7400e-003**	**3.0000e-005**	**2.7700e-003**	**7.3000e-004**	**3.0000e-005**	**7.6000e-004**	**0.0000**	**2.5749**	**2.5749**	**1.8000e-004**	**0.0000**	**2.5787**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0390	0.4111	0.2582	4.2000e-004		0.0236	0.0236		0.0217	0.0217	0.0000	39.2410	39.2410	0.0117	0.0000	39.4857
Total	**0.0390**	**0.4111**	**0.2582**	**4.2000e-004**		**0.0236**	**0.0236**		**0.0217**	**0.0217**	**0.0000**	**39.2410**	**39.2410**	**0.0117**	**0.0000**	**39.4857**

3.5 Trenching - 2016

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	1.6200e-003	2.4700e-003	0.0223	3.0000e-005	2.7400e-003	3.0000e-005	2.7700e-003	7.3000e-004	3.0000e-005	7.6000e-004	0.0000	2.5749	2.5749	1.8000e-004	0.0000	2.5787
Total	**1.6200e-003**	**2.4700e-003**	**0.0223**	**3.0000e-005**	**2.7400e-003**	**3.0000e-005**	**2.7700e-003**	**7.3000e-004**	**3.0000e-005**	**7.6000e-004**	**0.0000**	**2.5749**	**2.5749**	**1.8000e-004**	**0.0000**	**2.5787**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.464236	0.038779	0.210624	0.164455	0.051413	0.007282	0.016457	0.029840	0.003038	0.002180	0.008160	0.000830	0.002706

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					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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**

5.2 Energy by Land Use - NaturalGas

Mitigated

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

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2026	0.0000	3.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.1000e-004	7.1000e-004	0.0000	0.0000	7.6000e-004
Unmitigated	0.2026	0.0000	3.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.1000e-004	7.1000e-004	0.0000	0.0000	7.6000e-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	0.0464					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1562					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	3.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.1000e-004	7.1000e-004	0.0000	0.0000	7.6000e-004
Total	**0.2026**	**0.0000**	**3.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.1000e-004**	**7.1000e-004**	**0.0000**	**0.0000**	**7.6000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Consumer Products	0.1562					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	3.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.1000e-004	7.1000e-004	0.0000	0.0000	7.6000e-004
Architectural Coating	0.0464					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2026**	**0.0000**	**3.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.1000e-004**	**7.1000e-004**	**0.0000**	**0.0000**	**7.6000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation

UCSC Recycling Yard Phase 1

North Central Coast Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	40.00	1000sqft	0.92	40,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.8	**Precipitation Freq (Days)**	53
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 25,000 sf of compacted aggregate base for construction and demolition activities, bin and equipment storage, and access, and 15,000 sf of compacted earth for greenwaste and landscape supply storage

Construction Phase - Based on construction schedule provided

Off-road Equipment - Equipment list 2/5/15

Off-road Equipment - Construction Equipment list

Off-road Equipment - Construction Equip list

Off-road Equipment - Construction equipment list E. Mowbray 2/5/2015

Off-road Equipment - Construction Equip list

Trips and VMT -

Grading - Prelim design set earthworks

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	2.00
tblConstructionPhase	NumDays	2.00	20.00
tblConstructionPhase	NumDays	1.00	3.00
tblConstructionPhase	PhaseEndDate	8/31/2016	8/17/2016
tblConstructionPhase	PhaseStartDate	6/18/2016	6/20/2016
tblConstructionPhase	PhaseStartDate	7/21/2016	7/7/2016
tblGrading	AcresOfGrading	30.00	7.00
tblGrading	MaterialExported	0.00	3,140.00
tblGrading	MaterialImported	0.00	2,425.00
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.48	0.48
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.41	0.41

tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Scrapers
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Concrete/Industrial Saws	Graders
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Sweepers/Scrubbers
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	WorkerTripNumber	13.00	10.00
tblTripsAndVMT	WorkerTripNumber	10.00	5.00
tblTripsAndVMT	WorkerTripNumber	25.00	23.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	9.5587	99.1476	68.5996	0.1156	2.1512	4.8756	7.0268	0.7266	4.5156	5.2423	0.0000	11,723.6986	11,723.6986	2.5429	0.0000	11,777.0991
Total	**9.5587**	**99.1476**	**68.5996**	**0.1156**	**2.1512**	**4.8756**	**7.0268**	**0.7266**	**4.5156**	**5.2423**	**0.0000**	**11,723.6986**	**11,723.6986**	**2.5429**	**0.0000**	**11,777.0991**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	9.5587	99.1476	68.5996	0.1156	2.1512	4.8756	7.0268	0.7266	4.5156	5.2423	0.0000	11,723.6986	11,723.6986	2.5429	0.0000	11,777.0991
Total	**9.5587**	**99.1476**	**68.5996**	**0.1156**	**2.1512**	**4.8756**	**7.0268**	**0.7266**	**4.5156**	**5.2423**	**0.0000**	**11,723.6986**	**11,723.6986**	**2.5429**	**0.0000**	**11,777.0991**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1104	4.0000e-005	4.1600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		8.7500e-003	8.7500e-003	2.0000e-005		9.2700e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.1104**	**4.0000e-005**	**4.1600e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**8.7500e-003**	**8.7500e-003**	**2.0000e-005**	**0.0000**	**9.2700e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1104	4.0000e-005	4.1600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		8.7500e-003	8.7500e-003	2.0000e-005		9.2700e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.1104**	**4.0000e-005**	**4.1600e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**8.7500e-003**	**8.7500e-003**	**2.0000e-005**	**0.0000**	**9.2700e-003**

	ROG	NOx	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	Demolition	Demolition	6/16/2016	6/17/2016	5	2	
2	Site Preparation	Site Preparation	6/20/2016	6/22/2016	5	3	
3	Grading	Grading	6/23/2016	7/20/2016	5	20	
4	Trenching	Trenching	7/7/2016	8/17/2016	5	30	

Acres of Grading (Site Preparation Phase): 1.5

Acres of Grading (Grading Phase): 7

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Loaders	1	1.00	199	0.36
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Scrapers	1	8.00	361	0.48
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Off-Highway Trucks	1	8.00	400	0.38
Grading	Plate Compactors	1	8.00	8	0.43
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Trenching	Rubber Tired Loaders	1	8.00	199	0.36
Trenching	Excavators	2	8.00	162	0.38
Grading	Rubber Tired Loaders	1	8.00	199	0.36
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Plate Compactors	2	8.00	8	0.43
Trenching	Rollers	1	8.00	80	0.38
Trenching	Forklifts	1	8.00	89	0.20
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Graders	1	8.00	174	0.41
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Site Preparation	Off-Highway Trucks	1	8.00	400	0.38
Site Preparation	Sweepers/Scrubbers	1	8.00	64	0.46

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
Demolition	5	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	10	23.00	0.00	696.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3743	12.0463	8.9341	0.0128		0.8314	0.8314		0.7927	0.7927		1,273.1573	1,273.1573	0.2626		1,278.6723
Total	**1.3743**	**12.0463**	**8.9341**	**0.0128**		**0.8314**	**0.8314**		**0.7927**	**0.7927**		**1,273.1573**	**1,273.1573**	**0.2626**		**1,278.6723**

3.2 Demolition - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0506	0.0785	0.6848	9.8000e-004	0.0822	8.2000e-004	0.0830	0.0218	7.5000e-004	0.0225		81.9213	81.9213	5.8300e-003		82.0438
Total	**0.0506**	**0.0785**	**0.6848**	**9.8000e-004**	**0.0822**	**8.2000e-004**	**0.0830**	**0.0218**	**7.5000e-004**	**0.0225**		**81.9213**	**81.9213**	**5.8300e-003**		**82.0438**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3743	12.0463	8.9341	0.0128		0.8314	0.8314		0.7927	0.7927	0.0000	1,273.1573	1,273.1573	0.2626		1,278.6723
Total	**1.3743**	**12.0463**	**8.9341**	**0.0128**		**0.8314**	**0.8314**		**0.7927**	**0.7927**	**0.0000**	**1,273.1573**	**1,273.1573**	**0.2626**		**1,278.6723**

3.2 Demolition - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0506	0.0785	0.6848	9.8000e-004	0.0822	8.2000e-004	0.0830	0.0218	7.5000e-004	0.0225		81.9213	81.9213	5.8300e-003		82.0438
Total	**0.0506**	**0.0785**	**0.6848**	**9.8000e-004**	**0.0822**	**8.2000e-004**	**0.0830**	**0.0218**	**7.5000e-004**	**0.0225**		**81.9213**	**81.9213**	**5.8300e-003**		**82.0438**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	2.7076	27.8381	14.5018	0.0251		1.5395	1.5395		1.4163	1.4163		2,603.8845	2,603.8845	0.7854		2,620.3784
Total	**2.7076**	**27.8381**	**14.5018**	**0.0251**	**0.5303**	**1.5395**	**2.0697**	**0.0573**	**1.4163**	**1.4736**		**2,603.8845**	**2,603.8845**	**0.7854**		**2,620.3784**

3.3 Site Preparation - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0253	0.0392	0.3424	4.9000e-004	0.0411	4.1000e-004	0.0415	0.0109	3.8000e-004	0.0113		40.9607	40.9607	2.9200e-003		41.0219
Total	**0.0253**	**0.0392**	**0.3424**	**4.9000e-004**	**0.0411**	**4.1000e-004**	**0.0415**	**0.0109**	**3.8000e-004**	**0.0113**		**40.9607**	**40.9607**	**2.9200e-003**		**41.0219**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	2.7076	27.8381	14.5018	0.0251		1.5395	1.5395		1.4163	1.4163	0.0000	2,603.884 5	2,603.884 5	0.7854		2,620.378 4
Total	**2.7076**	**27.8381**	**14.5018**	**0.0251**	**0.5303**	**1.5395**	**2.0697**	**0.0573**	**1.4163**	**1.4736**	**0.0000**	**2,603.884 5**	**2,603.884 5**	**0.7854**		**2,620.378 4**

3.3 Site Preparation - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0253	0.0392	0.3424	4.9000e-004	0.0411	4.1000e-004	0.0415	0.0109	3.8000e-004	0.0113		40.9607	40.9607	2.9200e-003		41.0219
Total	**0.0253**	**0.0392**	**0.3424**	**4.9000e-004**	**0.0411**	**4.1000e-004**	**0.0415**	**0.0109**	**3.8000e-004**	**0.0113**		**40.9607**	**40.9607**	**2.9200e-003**		**41.0219**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1670	0.0000	1.1670	0.4604	0.0000	0.4604			0.0000			0.0000
Off-Road	5.7732	61.8421	35.1011	0.0571		3.1574	3.1574		2.9334	2.9334		5,864.5304	5,864.5304	1.6407		5,898.9855
Total	**5.7732**	**61.8421**	**35.1011**	**0.0571**	**1.1670**	**3.1574**	**4.3244**	**0.4604**	**2.9334**	**3.3938**		**5,864.5304**	**5,864.5304**	**1.6407**		**5,898.9855**

3.4 Grading - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9542	9.5411	13.1343	0.0259	0.6063	0.1446	0.7509	0.1660	0.1330	0.2990		2,598.6070	2,598.6070	0.0191		2,599.0087
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1165	0.1804	1.5750	2.2600e-003	0.1889	1.8900e-003	0.1908	0.0501	1.7300e-003	0.0519		188.4190	188.4190	0.0134		188.7008
Total	**1.0706**	**9.7215**	**14.7092**	**0.0282**	**0.7952**	**0.1465**	**0.9417**	**0.2161**	**0.1347**	**0.3509**		**2,787.0260**	**2,787.0260**	**0.0326**		**2,787.7096**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1670	0.0000	1.1670	0.4604	0.0000	0.4604			0.0000			0.0000
Off-Road	5.7732	61.8421	35.1011	0.0571		3.1574	3.1574		2.9334	2.9334	0.0000	5,864.5304	5,864.5304	1.6407		5,898.9855
Total	**5.7732**	**61.8421**	**35.1011**	**0.0571**	**1.1670**	**3.1574**	**4.3244**	**0.4604**	**2.9334**	**3.3938**	**0.0000**	**5,864.5304**	**5,864.5304**	**1.6407**		**5,898.9855**

3.4 Grading - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9542	9.5411	13.1343	0.0259	0.6063	0.1446	0.7509	0.1660	0.1330	0.2990		2,598.6070	2,598.6070	0.0191		2,599.0087
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1165	0.1804	1.5750	2.2600e-003	0.1889	1.8900e-003	0.1908	0.0501	1.7300e-003	0.0519		188.4190	188.4190	0.0134		188.7008
Total	**1.0706**	**9.7215**	**14.7092**	**0.0282**	**0.7952**	**0.1465**	**0.9417**	**0.2161**	**0.1347**	**0.3509**		**2,787.0260**	**2,787.0260**	**0.0326**		**2,787.7096**

3.5 Trenching - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5984	27.4035	17.2143	0.0281		1.5698	1.5698		1.4458	1.4458		2,883.7232	2,883.7232	0.8562		2,901.7033
Total	**2.5984**	**27.4035**	**17.2143**	**0.0281**		**1.5698**	**1.5698**		**1.4458**	**1.4458**		**2,883.7232**	**2,883.7232**	**0.8562**		**2,901.7033**

3.5 Trenching - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1165	0.1804	1.5750	2.2600e-003	0.1889	1.8900e-003	0.1908	0.0501	1.7300e-003	0.0519		188.4190	188.4190	0.0134		188.7008
Total	**0.1165**	**0.1804**	**1.5750**	**2.2600e-003**	**0.1889**	**1.8900e-003**	**0.1908**	**0.0501**	**1.7300e-003**	**0.0519**		**188.4190**	**188.4190**	**0.0134**		**188.7008**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5984	27.4035	17.2143	0.0281		1.5698	1.5698		1.4458	1.4458	0.0000	2,883.7232	2,883.7232	0.8562		2,901.7033
Total	**2.5984**	**27.4035**	**17.2143**	**0.0281**		**1.5698**	**1.5698**		**1.4458**	**1.4458**	**0.0000**	**2,883.7232**	**2,883.7232**	**0.8562**		**2,901.7033**

3.5 Trenching - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1165	0.1804	1.5750	2.2600e-003	0.1889	1.8900e-003	0.1908	0.0501	1.7300e-003	0.0519		188.4190	188.4190	0.0134		188.7008
Total	**0.1165**	**0.1804**	**1.5750**	**2.2600e-003**	**0.1889**	**1.8900e-003**	**0.1908**	**0.0501**	**1.7300e-003**	**0.0519**		**188.4190**	**188.4190**	**0.0134**		**188.7008**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.464236	0.038779	0.210624	0.164455	0.051413	0.007282	0.016457	0.029840	0.003038	0.002180	0.008160	0.000830	0.002706

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

Mitigated

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

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1104	4.0000e-005	4.1600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		8.7500e-003	8.7500e-003	2.0000e-005		9.2700e-003
Unmitigated	1.1104	4.0000e-005	4.1600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		8.7500e-003	8.7500e-003	2.0000e-005		9.2700e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2540					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.8560					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.1600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		8.7500e-003	8.7500e-003	2.0000e-005		9.2700e-003
Total	**1.1104**	**4.0000e-005**	**4.1600e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**8.7500e-003**	**8.7500e-003**	**2.0000e-005**		**9.2700e-003**

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	lb/day										lb/day					
Consumer Products	0.8560					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.1600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		8.7500e-003	8.7500e-003	2.0000e-005		9.2700e-003
Architectural Coating	0.2540					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1104**	**4.0000e-005**	**4.1600e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**8.7500e-003**	**8.7500e-003**	**2.0000e-005**		**9.2700e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

UCSC Recycling Yard Phase 1

North Central Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	40.00	1000sqft	0.92	40,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.8	**Precipitation Freq (Days)**	53
Climate Zone	5			**Operational Year**	2017
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 25,000 sf of compacted aggregate base for construction and demolition activities, bin and equipment storage, and access, and 15,000 sf of compacted earth for greenwaste and landscape supply storage

Construction Phase - Based on construction schedule provided

Off-road Equipment - Equipment list 2/5/15

Off-road Equipment - Construction Equipment list

Off-road Equipment - Construction Equip list

Off-road Equipment - Construction equipment list E. Mowbray 2/5/2015

Off-road Equipment - Construction Equip list

Trips and VMT -

Grading - Prelim design set earthworks

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	2.00
tblConstructionPhase	NumDays	2.00	20.00
tblConstructionPhase	NumDays	1.00	3.00
tblConstructionPhase	PhaseEndDate	8/31/2016	8/17/2016
tblConstructionPhase	PhaseStartDate	6/18/2016	6/20/2016
tblConstructionPhase	PhaseStartDate	7/21/2016	7/7/2016
tblGrading	AcresOfGrading	30.00	7.00
tblGrading	MaterialExported	0.00	3,140.00
tblGrading	MaterialImported	0.00	2,425.00
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.48	0.48
tblOffRoadEquipment	LoadFactor	0.46	0.46
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.41	0.41

tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Scrapers
tblOffRoadEquipment	OffRoadEquipmentType		Sweepers/Scrubbers
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Concrete/Industrial Saws	Graders
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Sweepers/Scrubbers
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	WorkerTripNumber	13.00	10.00
tblTripsAndVMT	WorkerTripNumber	10.00	5.00
tblTripsAndVMT	WorkerTripNumber	25.00	23.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	9.3640	98.5718	63.4017	0.1159	2.1512	4.8751	7.0263	0.7266	4.5152	5.2418	0.0000	11,753.2060	11,753.2060	2.5426	0.0000	11,806.6010
Total	**9.3640**	**98.5718**	**63.4017**	**0.1159**	**2.1512**	**4.8751**	**7.0263**	**0.7266**	**4.5152**	**5.2418**	**0.0000**	**11,753.2060**	**11,753.2060**	**2.5426**	**0.0000**	**11,806.6010**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	9.3640	98.5718	63.4017	0.1159	2.1512	4.8751	7.0263	0.7266	4.5152	5.2418	0.0000	11,753.2060	11,753.2060	2.5426	0.0000	11,806.6010
Total	**9.3640**	**98.5718**	**63.4017**	**0.1159**	**2.1512**	**4.8751**	**7.0263**	**0.7266**	**4.5152**	**5.2418**	**0.0000**	**11,753.2060**	**11,753.2060**	**2.5426**	**0.0000**	**11,806.6010**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1104	4.0000e-005	4.1600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		8.7500e-003	8.7500e-003	2.0000e-005		9.2700e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.1104**	**4.0000e-005**	**4.1600e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**8.7500e-003**	**8.7500e-003**	**2.0000e-005**	**0.0000**	**9.2700e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1104	4.0000e-005	4.1600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		8.7500e-003	8.7500e-003	2.0000e-005		9.2700e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.1104**	**4.0000e-005**	**4.1600e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**8.7500e-003**	**8.7500e-003**	**2.0000e-005**	**0.0000**	**9.2700e-003**

	ROG	NOx	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	Demolition	Demolition	6/16/2016	6/17/2016	5	2	
2	Site Preparation	Site Preparation	6/20/2016	6/22/2016	5	3	
3	Grading	Grading	6/23/2016	7/20/2016	5	20	
4	Trenching	Trenching	7/7/2016	8/17/2016	5	30	

Acres of Grading (Site Preparation Phase): 1.5

Acres of Grading (Grading Phase): 7

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Loaders	1	1.00	199	0.36
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Scrapers	1	8.00	361	0.48
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Off-Highway Trucks	1	8.00	400	0.38
Grading	Plate Compactors	1	8.00	8	0.43
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Trenching	Rubber Tired Loaders	1	8.00	199	0.36
Trenching	Excavators	2	8.00	162	0.38
Grading	Rubber Tired Loaders	1	8.00	199	0.36
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Plate Compactors	2	8.00	8	0.43
Trenching	Rollers	1	8.00	80	0.38
Trenching	Forklifts	1	8.00	89	0.20
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Graders	1	8.00	174	0.41
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Site Preparation	Off-Highway Trucks	1	8.00	400	0.38
Site Preparation	Sweepers/Scrubbers	1	8.00	64	0.46

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
Demolition	5	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	10	23.00	0.00	696.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	9	23.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3743	12.0463	8.9341	0.0128		0.8314	0.8314		0.7927	0.7927		1,273.1573	1,273.1573	0.2626		1,278.6723
Total	**1.3743**	**12.0463**	**8.9341**	**0.0128**		**0.8314**	**0.8314**		**0.7927**	**0.7927**		**1,273.1573**	**1,273.1573**	**0.2626**		**1,278.6723**

3.2 Demolition - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0475	0.0626	0.6563	1.0400e-003	0.0822	8.2000e-004	0.0830	0.0218	7.5000e-004	0.0225		87.0003	87.0003	5.8300e-003		87.1228
Total	**0.0475**	**0.0626**	**0.6563**	**1.0400e-003**	**0.0822**	**8.2000e-004**	**0.0830**	**0.0218**	**7.5000e-004**	**0.0225**		**87.0003**	**87.0003**	**5.8300e-003**		**87.1228**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3743	12.0463	8.9341	0.0128		0.8314	0.8314		0.7927	0.7927	0.0000	1,273.1573	1,273.1573	0.2626		1,278.6723
Total	**1.3743**	**12.0463**	**8.9341**	**0.0128**		**0.8314**	**0.8314**		**0.7927**	**0.7927**	**0.0000**	**1,273.1573**	**1,273.1573**	**0.2626**		**1,278.6723**

3.2 Demolition - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0475	0.0626	0.6563	1.0400e-003	0.0822	8.2000e-004	0.0830	0.0218	7.5000e-004	0.0225		87.0003	87.0003	5.8300e-003		87.1228
Total	**0.0475**	**0.0626**	**0.6563**	**1.0400e-003**	**0.0822**	**8.2000e-004**	**0.0830**	**0.0218**	**7.5000e-004**	**0.0225**		**87.0003**	**87.0003**	**5.8300e-003**		**87.1228**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	2.7076	27.8381	14.5018	0.0251		1.5395	1.5395		1.4163	1.4163		2,603.8845	2,603.8845	0.7854		2,620.3784
Total	**2.7076**	**27.8381**	**14.5018**	**0.0251**	**0.5303**	**1.5395**	**2.0697**	**0.0573**	**1.4163**	**1.4736**		**2,603.8845**	**2,603.8845**	**0.7854**		**2,620.3784**

3.3 Site Preparation - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0237	0.0313	0.3282	5.2000e-004	0.0411	4.1000e-004	0.0415	0.0109	3.8000e-004	0.0113		43.5001	43.5001	2.9200e-003		43.5614
Total	**0.0237**	**0.0313**	**0.3282**	**5.2000e-004**	**0.0411**	**4.1000e-004**	**0.0415**	**0.0109**	**3.8000e-004**	**0.0113**		**43.5001**	**43.5001**	**2.9200e-003**		**43.5614**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	2.7076	27.8381	14.5018	0.0251		1.5395	1.5395		1.4163	1.4163	0.0000	2,603.8845	2,603.8845	0.7854		2,620.3784
Total	**2.7076**	**27.8381**	**14.5018**	**0.0251**	**0.5303**	**1.5395**	**2.0697**	**0.0573**	**1.4163**	**1.4736**	**0.0000**	**2,603.8845**	**2,603.8845**	**0.7854**		**2,620.3784**

3.3 Site Preparation - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0237	0.0313	0.3282	5.2000e-004	0.0411	4.1000e-004	0.0415	0.0109	3.8000e-004	0.0113		43.5001	43.5001	2.9200e-003		43.5614
Total	**0.0237**	**0.0313**	**0.3282**	**5.2000e-004**	**0.0411**	**4.1000e-004**	**0.0415**	**0.0109**	**3.8000e-004**	**0.0113**		**43.5001**	**43.5001**	**2.9200e-003**		**43.5614**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1670	0.0000	1.1670	0.4604	0.0000	0.4604			0.0000			0.0000
Off-Road	5.7732	61.8421	35.1011	0.0571		3.1574	3.1574		2.9334	2.9334		5,864.5304	5,864.5304	1.6407		5,898.9855
Total	**5.7732**	**61.8421**	**35.1011**	**0.0571**	**1.1670**	**3.1574**	**4.3244**	**0.4604**	**2.9334**	**3.3938**		**5,864.5304**	**5,864.5304**	**1.6407**		**5,898.9855**

3.4 Grading - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7741	9.0384	8.0673	0.0259	0.6063	0.1441	0.7504	0.1660	0.1325	0.2986		2,604.7511	2,604.7511	0.0189		2,605.1474
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1092	0.1439	1.5095	2.4000e-003	0.1889	1.8900e-003	0.1908	0.0501	1.7300e-003	0.0519		200.1006	200.1006	0.0134		200.3825
Total	**0.8832**	**9.1823**	**9.5768**	**0.0283**	**0.7952**	**0.1460**	**0.9412**	**0.2161**	**0.1343**	**0.3504**		**2,804.8517**	**2,804.8517**	**0.0323**		**2,805.5298**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1670	0.0000	1.1670	0.4604	0.0000	0.4604			0.0000			0.0000
Off-Road	5.7732	61.8421	35.1011	0.0571		3.1574	3.1574		2.9334	2.9334	0.0000	5,864.5304	5,864.5304	1.6407		5,898.9855
Total	**5.7732**	**61.8421**	**35.1011**	**0.0571**	**1.1670**	**3.1574**	**4.3244**	**0.4604**	**2.9334**	**3.3938**	**0.0000**	**5,864.5304**	**5,864.5304**	**1.6407**		**5,898.9855**

3.4 Grading - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7741	9.0384	8.0673	0.0259	0.6063	0.1441	0.7504	0.1660	0.1325	0.2986		2,604.7511	2,604.7511	0.0189		2,605.1474
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1092	0.1439	1.5095	2.4000e-003	0.1889	1.8900e-003	0.1908	0.0501	1.7300e-003	0.0519		200.1006	200.1006	0.0134		200.3825
Total	**0.8832**	**9.1823**	**9.5768**	**0.0283**	**0.7952**	**0.1460**	**0.9412**	**0.2161**	**0.1343**	**0.3504**		**2,804.8517**	**2,804.8517**	**0.0323**		**2,805.5298**

3.5 Trenching - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5984	27.4035	17.2143	0.0281		1.5698	1.5698		1.4458	1.4458		2,883.7232	2,883.7232	0.8562		2,901.7033
Total	**2.5984**	**27.4035**	**17.2143**	**0.0281**		**1.5698**	**1.5698**		**1.4458**	**1.4458**		**2,883.7232**	**2,883.7232**	**0.8562**		**2,901.7033**

3.5 Trenching - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1092	0.1439	1.5095	2.4000e-003	0.1889	1.8900e-003	0.1908	0.0501	1.7300e-003	0.0519		200.1006	200.1006	0.0134		200.3825
Total	**0.1092**	**0.1439**	**1.5095**	**2.4000e-003**	**0.1889**	**1.8900e-003**	**0.1908**	**0.0501**	**1.7300e-003**	**0.0519**		**200.1006**	**200.1006**	**0.0134**		**200.3825**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5984	27.4035	17.2143	0.0281		1.5698	1.5698		1.4458	1.4458	0.0000	2,883.723 2	2,883.723 2	0.8562		2,901.703 3
Total	**2.5984**	**27.4035**	**17.2143**	**0.0281**		**1.5698**	**1.5698**		**1.4458**	**1.4458**	**0.0000**	**2,883.723 2**	**2,883.723 2**	**0.8562**		**2,901.703 3**

3.5 Trenching - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1092	0.1439	1.5095	2.4000e-003	0.1889	1.8900e-003	0.1908	0.0501	1.7300e-003	0.0519		200.1006	200.1006	0.0134		200.3825
Total	**0.1092**	**0.1439**	**1.5095**	**2.4000e-003**	**0.1889**	**1.8900e-003**	**0.1908**	**0.0501**	**1.7300e-003**	**0.0519**		**200.1006**	**200.1006**	**0.0134**		**200.3825**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.464236	0.038779	0.210624	0.164455	0.051413	0.007282	0.016457	0.029840	0.003038	0.002180	0.008160	0.000830	0.002706

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

Mitigated

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

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1104	4.0000e-005	4.1600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		8.7500e-003	8.7500e-003	2.0000e-005		9.2700e-003
Unmitigated	1.1104	4.0000e-005	4.1600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		8.7500e-003	8.7500e-003	2.0000e-005		9.2700e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	0.8560					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.1600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		8.7500e-003	8.7500e-003	2.0000e-005		9.2700e-003
Architectural Coating	0.2540					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1104**	**4.0000e-005**	**4.1600e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**8.7500e-003**	**8.7500e-003**	**2.0000e-005**		**9.2700e-003**

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	lb/day										lb/day					
Consumer Products	0.8560					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-004	4.0000e-005	4.1600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		8.7500e-003	8.7500e-003	2.0000e-005		9.2700e-003
Architectural Coating	0.2540					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1104**	**4.0000e-005**	**4.1600e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**8.7500e-003**	**8.7500e-003**	**2.0000e-005**		**9.2700e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

UCSC Recycling Yard Phase 2

North Central Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	13.00	1000sqft	0.30	13,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.8	**Precipitation Freq (Days)**	53
Climate Zone	5			**Operational Year**	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - size of MRF

Construction Phase - Based on construction schedule provided

Off-road Equipment - 2/5/15 Equip List

Off-road Equipment - 2/5/15 Equip List

Off-road Equipment - 2/5/15 Equipment List

Off-road Equipment - Equipment list 2/5/15

Off-road Equipment - Construction Equipment list

Off-road Equipment - Construction Equip list

Off-road Equipment - Construction equipment list E. Mowbray 2/5/2015

Off-road Equipment - Construction Equip list

Trips and VMT -

Grading - All included in Phase 1

Waste Mitigation -

Vehicle Trips - On-campus trucks (3 at 4x per day)

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	100.00	80.00
tblConstructionPhase	NumDays	10.00	2.00
tblConstructionPhase	NumDays	2.00	20.00
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	1.00	3.00
tblConstructionPhase	PhaseEndDate	4/3/2017	3/13/2017
tblConstructionPhase	PhaseEndDate	2/23/2017	2/10/2017
tblConstructionPhase	PhaseEndDate	3/10/2017	3/6/2017
tblConstructionPhase	PhaseEndDate	11/17/2016	11/3/2016
tblConstructionPhase	PhaseStartDate	3/7/2017	2/14/2017
tblConstructionPhase	PhaseStartDate	11/4/2016	10/24/2016
tblConstructionPhase	PhaseStartDate	2/11/2017	2/7/2017
tblConstructionPhase	PhaseStartDate	10/21/2016	10/7/2016
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	WorkerTripNumber	13.00	10.00
tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	10.00	5.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	12.00

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					
2016	0.1433	1.2902	0.8897	1.5200e-003	0.0113	0.0823	0.0937	5.0300e-003	0.0785	0.0835	0.0000	136.9054	136.9054	0.0298	0.0000	137.5319
2017	0.2578	0.9933	0.6971	1.2000e-003	3.2600e-003	0.0599	0.0632	8.7000e-004	0.0566	0.0575	0.0000	107.4397	107.4397	0.0253	0.0000	107.9717
Total	**0.4011**	**2.2835**	**1.5869**	**2.7200e-003**	**0.0146**	**0.1423**	**0.1569**	**5.9000e-003**	**0.1351**	**0.1410**	**0.0000**	**244.3451**	**244.3451**	**0.0552**	**0.0000**	**245.5037**

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					
2016	0.1433	1.2902	0.8897	1.5200e-003	0.0113	0.0823	0.0937	5.0300e-003	0.0785	0.0835	0.0000	136.9053	136.9053	0.0298	0.0000	137.5318
2017	0.2578	0.9933	0.6971	1.2000e-003	3.2600e-003	0.0599	0.0632	8.7000e-004	0.0566	0.0575	0.0000	107.4396	107.4396	0.0253	0.0000	107.9716
Total	**0.4011**	**2.2835**	**1.5869**	**2.7200e-003**	**0.0146**	**0.1423**	**0.1569**	**5.9000e-003**	**0.1351**	**0.1410**	**0.0000**	**244.3448**	**244.3448**	**0.0552**	**0.0000**	**245.5034**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0659	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-004	2.3000e-004	0.0000	0.0000	2.5000e-004
Energy	1.8000e-003	0.0164	0.0138	1.0000e-004		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003	0.0000	49.0909	49.0909	1.7600e-003	6.2000e-004	49.3197
Mobile	0.0859	0.2321	1.0000	1.8800e-003	0.1217	2.8900e-003	0.1246	0.0326	2.6600e-003	0.0353	0.0000	141.0648	141.0648	6.8200e-003	0.0000	141.2080
Waste						0.0000	0.0000		0.0000	0.0000	3.2722	0.0000	3.2722	0.1934	0.0000	7.3332
Water						0.0000	0.0000		0.0000	0.0000	0.9537	4.7322	5.6860	0.0982	2.3600e-003	8.4783
Total	**0.1535**	**0.2484**	**1.0138**	**1.9800e-003**	**0.1217**	**4.1300e-003**	**0.1258**	**0.0326**	**3.9000e-003**	**0.0365**	**4.2260**	**194.8881**	**199.1140**	**0.3001**	**2.9800e-003**	**206.3395**

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	0.0659	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-004	2.3000e-004	0.0000	0.0000	2.5000e-004
Energy	1.8000e-003	0.0164	0.0138	1.0000e-004		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003	0.0000	49.0909	49.0909	1.7600e-003	6.2000e-004	49.3197
Mobile	0.0859	0.2321	1.0000	1.8800e-003	0.1217	2.8900e-003	0.1246	0.0326	2.6600e-003	0.0353	0.0000	141.0648	141.0648	6.8200e-003	0.0000	141.2080
Waste						0.0000	0.0000		0.0000	0.0000	3.2722	0.0000	3.2722	0.1934	0.0000	7.3332
Water						0.0000	0.0000		0.0000	0.0000	0.9537	4.7322	5.6860	0.0982	2.3500e-003	8.4768
Total	**0.1535**	**0.2484**	**1.0138**	**1.9800e-003**	**0.1217**	**4.1300e-003**	**0.1258**	**0.0326**	**3.9000e-003**	**0.0365**	**4.2260**	**194.8881**	**199.1140**	**0.3001**	**2.9700e-003**	**206.3380**

	ROG	NOx	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**	**0.01**	**0.34**	**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	Demolition	Demolition	9/16/2016	9/19/2016	5	2	
2	Site Preparation	Site Preparation	9/20/2016	9/22/2016	5	3	
3	Grading	Grading	9/23/2016	10/20/2016	5	20	
4	Trenching	Trenching	10/7/2016	11/3/2016	5	20	
5	Building Construction	Building Construction	10/24/2016	2/10/2017	5	80	
6	Asphalt Paving	Paving	2/7/2017	3/6/2017	5	20	
7	Architectural Coating	Architectural Coating	2/14/2017	3/13/2017	5	20	

Acres of Grading (Site Preparation Phase): 1.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 19,500; Non-Residential Outdoor: 6,500 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Demolition	Rubber Tired Loaders	1	1.00	199	0.36
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Sweepers/Scrubbers	1	8.00	64	0.46
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Grading	Tractors/Loaders/Backhoes	1	6.00	97	0.37

Trenching	Excavators	1	8.00	162	0.38
Trenching	Forklifts	1	8.00	89	0.20
Trenching	Plate Compactors	1	8.00	8	0.43
Trenching	Rollers	1	8.00	80	0.38
Trenching	Rubber Tired Loaders	1	8.00	199	0.36
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Aerial Lifts	2	8.00	62	0.31
Building Construction	Air Compressors	2	8.00	78	0.48
Building Construction	Bore/Drill Rigs	1	8.00	205	0.50
Building Construction	Cement and Mortar Mixers	1	8.00	9	0.56
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Asphalt Paving	Cement and Mortar Mixers	3	6.00	9	0.56
Asphalt Paving	Graders	1	8.00	174	0.41
Asphalt Paving	Off-Highway Trucks	1	8.00	400	0.38
Asphalt Paving	Other Construction Equipment	1	8.00	171	0.42
Asphalt Paving	Pavers	1	7.00	125	0.42
Asphalt Paving	Rollers	2	7.00	80	0.38
Asphalt Paving	Sweepers/Scrubbers	1	8.00	64	0.46
Asphalt Paving	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Architectural Coating	Forklifts	1	6.00	89	0.20

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
Demolition	5	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	13	5.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Paving	12	30.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

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	1.3700e-003	0.0121	8.9300e-003	1.0000e-005		8.3000e-004	8.3000e-004		7.9000e-004	7.9000e-004	0.0000	1.1550	1.1550	2.4000e-004	0.0000	1.1600
Total	**1.3700e-003**	**0.0121**	**8.9300e-003**	**1.0000e-005**		**8.3000e-004**	**8.3000e-004**		**7.9000e-004**	**7.9000e-004**	**0.0000**	**1.1550**	**1.1550**	**2.4000e-004**	**0.0000**	**1.1600**

3.2 Demolition - 2016

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	5.0000e-005	7.0000e-005	6.4000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0746	0.0746	1.0000e-005	0.0000	0.0748
Total	**5.0000e-005**	**7.0000e-005**	**6.4000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0746**	**0.0746**	**1.0000e-005**	**0.0000**	**0.0748**

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	1.3700e-003	0.0121	8.9300e-003	1.0000e-005		8.3000e-004	8.3000e-004		7.9000e-004	7.9000e-004	0.0000	1.1550	1.1550	2.4000e-004	0.0000	1.1600
Total	**1.3700e-003**	**0.0121**	**8.9300e-003**	**1.0000e-005**		**8.3000e-004**	**8.3000e-004**		**7.9000e-004**	**7.9000e-004**	**0.0000**	**1.1550**	**1.1550**	**2.4000e-004**	**0.0000**	**1.1600**

3.2 Demolition - 2016

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	5.0000e-005	7.0000e-005	6.4000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0746	0.0746	1.0000e-005	0.0000	0.0748
Total	**5.0000e-005**	**7.0000e-005**	**6.4000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0746**	**0.0746**	**1.0000e-005**	**0.0000**	**0.0748**

3.3 Site Preparation - 2016

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					8.0000e-004	0.0000	8.0000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6500e-003	0.0255	0.0142	2.0000e-005		1.7000e-003	1.7000e-003		1.5600e-003	1.5600e-003	0.0000	1.6833	1.6833	5.1000e-004	0.0000	1.6940
Total	**2.6500e-003**	**0.0255**	**0.0142**	**2.0000e-005**	**8.0000e-004**	**1.7000e-003**	**2.5000e-003**	**9.0000e-005**	**1.5600e-003**	**1.6500e-003**	**0.0000**	**1.6833**	**1.6833**	**5.1000e-004**	**0.0000**	**1.6940**

3.3 Site Preparation - 2016

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	2.0000e-005	3.0000e-005	2.9000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0336	0.0336	0.0000	0.0000	0.0336
Total	**2.0000e-005**	**3.0000e-005**	**2.9000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0336**	**0.0336**	**0.0000**	**0.0000**	**0.0336**

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					8.0000e-004	0.0000	8.0000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6500e-003	0.0255	0.0142	2.0000e-005		1.7000e-003	1.7000e-003		1.5600e-003	1.5600e-003	0.0000	1.6833	1.6833	5.1000e-004	0.0000	1.6940
Total	**2.6500e-003**	**0.0255**	**0.0142**	**2.0000e-005**	**8.0000e-004**	**1.7000e-003**	**2.5000e-003**	**9.0000e-005**	**1.5600e-003**	**1.6500e-003**	**0.0000**	**1.6833**	**1.6833**	**5.1000e-004**	**0.0000**	**1.6940**

3.3 Site Preparation - 2016

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	2.0000e-005	3.0000e-005	2.9000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0336	0.0336	0.0000	0.0000	0.0336
Total	**2.0000e-005**	**3.0000e-005**	**2.9000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0336**	**0.0336**	**0.0000**	**0.0000**	**0.0336**

3.4 Grading - 2016

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					7.5300e-003	0.0000	7.5300e-003	4.1400e-003	0.0000	4.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0146	0.1215	0.0900	1.2000e-004		9.1200e-003	9.1200e-003		8.6700e-003	8.6700e-003	0.0000	11.0206	11.0206	2.2200e-003	0.0000	11.0672
Total	**0.0146**	**0.1215**	**0.0900**	**1.2000e-004**	**7.5300e-003**	**9.1200e-003**	**0.0167**	**4.1400e-003**	**8.6700e-003**	**0.0128**	**0.0000**	**11.0206**	**11.0206**	**2.2200e-003**	**0.0000**	**11.0672**

3.4 Grading - 2016

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	2.4000e-004	3.6000e-004	3.2200e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3732	0.3732	3.0000e-005	0.0000	0.3737
Total	**2.4000e-004**	**3.6000e-004**	**3.2200e-003**	**0.0000**	**4.0000e-004**	**0.0000**	**4.0000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3732**	**0.3732**	**3.0000e-005**	**0.0000**	**0.3737**

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					7.5300e-003	0.0000	7.5300e-003	4.1400e-003	0.0000	4.1400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0146	0.1215	0.0900	1.2000e-004		9.1200e-003	9.1200e-003		8.6700e-003	8.6700e-003	0.0000	11.0205	11.0205	2.2200e-003	0.0000	11.0672
Total	**0.0146**	**0.1215**	**0.0900**	**1.2000e-004**	**7.5300e-003**	**9.1200e-003**	**0.0167**	**4.1400e-003**	**8.6700e-003**	**0.0128**	**0.0000**	**11.0205**	**11.0205**	**2.2200e-003**	**0.0000**	**11.0672**

3.4 Grading - 2016

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	2.4000e-004	3.6000e-004	3.2200e-003	0.0000	4.0000e-004	0.0000	4.0000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3732	0.3732	3.0000e-005	0.0000	0.3737
Total	**2.4000e-004**	**3.6000e-004**	**3.2200e-003**	**0.0000**	**4.0000e-004**	**0.0000**	**4.0000e-004**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3732**	**0.3732**	**3.0000e-005**	**0.0000**	**0.3737**

3.5 Trenching - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0183	0.1947	0.1116	1.9000e-004		0.0109	0.0109		0.0101	0.0101	0.0000	17.9228	17.9228	5.3400e-003	0.0000	18.0350
Total	**0.0183**	**0.1947**	**0.1116**	**1.9000e-004**		**0.0109**	**0.0109**		**0.0101**	**0.0101**	**0.0000**	**17.9228**	**17.9228**	**5.3400e-003**	**0.0000**	**18.0350**

3.5 Trenching - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1000e-004	1.0700e-003	9.6700e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.1195	1.1195	8.0000e-005	0.0000	1.1212
Total	**7.1000e-004**	**1.0700e-003**	**9.6700e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2100e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.1195**	**1.1195**	**8.0000e-005**	**0.0000**	**1.1212**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0183	0.1947	0.1116	1.9000e-004		0.0109	0.0109		0.0101	0.0101	0.0000	17.9228	17.9228	5.3400e-003	0.0000	18.0350
Total	**0.0183**	**0.1947**	**0.1116**	**1.9000e-004**		**0.0109**	**0.0109**		**0.0101**	**0.0101**	**0.0000**	**17.9228**	**17.9228**	**5.3400e-003**	**0.0000**	**18.0350**

3.5 Trenching - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1000e-004	1.0700e-003	9.6700e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.1195	1.1195	8.0000e-005	0.0000	1.1212
Total	**7.1000e-004**	**1.0700e-003**	**9.6700e-003**	**1.0000e-005**	**1.1900e-003**	**1.0000e-005**	**1.2100e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.1195**	**1.1195**	**8.0000e-005**	**0.0000**	**1.1212**

3.6 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1040	0.9291	0.6342	1.1300e-003		0.0597	0.0597		0.0573	0.0573	0.0000	101.5277	101.5277	0.0213	0.0000	101.9757
Total	**0.1040**	**0.9291**	**0.6342**	**1.1300e-003**		**0.0597**	**0.0597**		**0.0573**	**0.0573**	**0.0000**	**101.5277**	**101.5277**	**0.0213**	**0.0000**	**101.9757**

3.6 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.2000e-004	5.0400e-003	8.8600e-003	1.0000e-005	3.2000e-004	8.0000e-005	4.0000e-004	9.0000e-005	8.0000e-005	1.7000e-004	0.0000	1.0622	1.0622	1.0000e-005	0.0000	1.0624
Worker	5.9000e-004	8.9000e-004	8.0600e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9329	0.9329	7.0000e-005	0.0000	0.9343
Total	**1.3100e-003**	**5.9300e-003**	**0.0169**	**2.0000e-005**	**1.3100e-003**	**9.0000e-005**	**1.4000e-003**	**3.5000e-004**	**9.0000e-005**	**4.4000e-004**	**0.0000**	**1.9952**	**1.9952**	**8.0000e-005**	**0.0000**	**1.9968**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1040	0.9291	0.6342	1.1300e-003		0.0597	0.0597		0.0573	0.0573	0.0000	101.5276	101.5276	0.0213	0.0000	101.9755
Total	**0.1040**	**0.9291**	**0.6342**	**1.1300e-003**		**0.0597**	**0.0597**		**0.0573**	**0.0573**	**0.0000**	**101.5276**	**101.5276**	**0.0213**	**0.0000**	**101.9755**

3.6 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.2000e-004	5.0400e-003	8.8600e-003	1.0000e-005	3.2000e-004	8.0000e-005	4.0000e-004	9.0000e-005	8.0000e-005	1.7000e-004	0.0000	1.0622	1.0622	1.0000e-005	0.0000	1.0624
Worker	5.9000e-004	8.9000e-004	8.0600e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9329	0.9329	7.0000e-005	0.0000	0.9343
Total	**1.3100e-003**	**5.9300e-003**	**0.0169**	**2.0000e-005**	**1.3100e-003**	**9.0000e-005**	**1.4000e-003**	**3.5000e-004**	**9.0000e-005**	**4.4000e-004**	**0.0000**	**1.9952**	**1.9952**	**8.0000e-005**	**0.0000**	**1.9968**

3.6 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0565	0.5094	0.3754	6.8000e-004		0.0318	0.0318		0.0306	0.0306	0.0000	60.3886	60.3886	0.0125	0.0000	60.6509
Total	**0.0565**	**0.5094**	**0.3754**	**6.8000e-004**		**0.0318**	**0.0318**		**0.0306**	**0.0306**	**0.0000**	**60.3886**	**60.3886**	**0.0125**	**0.0000**	**60.6509**

3.6 Building Construction - 2017

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	3.8000e-004	2.6800e-003	4.9000e-003	1.0000e-005	1.9000e-004	4.0000e-005	2.3000e-004	5.0000e-005	4.0000e-005	9.0000e-005	0.0000	0.6266	0.6266	0.0000	0.0000	0.6267
Worker	3.1000e-004	4.8000e-004	4.2700e-003	1.0000e-005	6.0000e-004	1.0000e-005	6.0000e-004	1.6000e-004	1.0000e-005	1.6000e-004	0.0000	0.5385	0.5385	4.0000e-005	0.0000	0.5392
Total	**6.9000e-004**	**3.1600e-003**	**9.1700e-003**	**2.0000e-005**	**7.9000e-004**	**5.0000e-005**	**8.3000e-004**	**2.1000e-004**	**5.0000e-005**	**2.5000e-004**	**0.0000**	**1.1651**	**1.1651**	**4.0000e-005**	**0.0000**	**1.1659**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0565	0.5094	0.3754	6.8000e-004		0.0318	0.0318		0.0306	0.0306	0.0000	60.3885	60.3885	0.0125	0.0000	60.6508
Total	**0.0565**	**0.5094**	**0.3754**	**6.8000e-004**		**0.0318**	**0.0318**		**0.0306**	**0.0306**	**0.0000**	**60.3885**	**60.3885**	**0.0125**	**0.0000**	**60.6508**

3.6 Building Construction - 2017

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	3.8000e-004	2.6800e-003	4.9000e-003	1.0000e-005	1.9000e-004	4.0000e-005	2.3000e-004	5.0000e-005	4.0000e-005	9.0000e-005	0.0000	0.6266	0.6266	0.0000	0.0000	0.6267
Worker	3.1000e-004	4.8000e-004	4.2700e-003	1.0000e-005	6.0000e-004	1.0000e-005	6.0000e-004	1.6000e-004	1.0000e-005	1.6000e-004	0.0000	0.5385	0.5385	4.0000e-005	0.0000	0.5392
Total	**6.9000e-004**	**3.1600e-003**	**9.1700e-003**	**2.0000e-005**	**7.9000e-004**	**5.0000e-005**	**8.3000e-004**	**2.1000e-004**	**5.0000e-005**	**2.5000e-004**	**0.0000**	**1.1651**	**1.1651**	**4.0000e-005**	**0.0000**	**1.1659**

3.7 Asphalt Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0438	0.4432	0.2668	4.4000e-004		0.0252	0.0252		0.0232	0.0232	0.0000	40.0439	40.0439	0.0121	0.0000	40.2971
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0438**	**0.4432**	**0.2668**	**4.4000e-004**		**0.0252**	**0.0252**		**0.0232**	**0.0232**	**0.0000**	**40.0439**	**40.0439**	**0.0121**	**0.0000**	**40.2971**

3.7 Asphalt Paving - 2017

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	1.2200e-003	1.9100e-003	0.0171	3.0000e-005	2.3900e-003	2.0000e-005	2.4100e-003	6.3000e-004	2.0000e-005	6.6000e-004	0.0000	2.1539	2.1539	1.4000e-004	0.0000	2.1570
Total	**1.2200e-003**	**1.9100e-003**	**0.0171**	**3.0000e-005**	**2.3900e-003**	**2.0000e-005**	**2.4100e-003**	**6.3000e-004**	**2.0000e-005**	**6.6000e-004**	**0.0000**	**2.1539**	**2.1539**	**1.4000e-004**	**0.0000**	**2.1570**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0438	0.4432	0.2668	4.4000e-004		0.0252	0.0252		0.0232	0.0232	0.0000	40.0438	40.0438	0.0121	0.0000	40.2971
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0438**	**0.4432**	**0.2668**	**4.4000e-004**		**0.0252**	**0.0252**		**0.0232**	**0.0232**	**0.0000**	**40.0438**	**40.0438**	**0.0121**	**0.0000**	**40.2971**

3.7 Asphalt Paving - 2017

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	1.2200e-003	1.9100e-003	0.0171	3.0000e-005	2.3900e-003	2.0000e-005	2.4100e-003	6.3000e-004	2.0000e-005	6.6000e-004	0.0000	2.1539	2.1539	1.4000e-004	0.0000	2.1570
Total	**1.2200e-003**	**1.9100e-003**	**0.0171**	**3.0000e-005**	**2.3900e-003**	**2.0000e-005**	**2.4100e-003**	**6.3000e-004**	**2.0000e-005**	**6.6000e-004**	**0.0000**	**2.1539**	**2.1539**	**1.4000e-004**	**0.0000**	**2.1570**

3.8 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1506					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9100e-003	0.0356	0.0281	4.0000e-005		2.8600e-003	2.8600e-003		2.7700e-003	2.7700e-003	0.0000	3.6164	3.6164	6.0000e-004	0.0000	3.6289
Total	**0.1556**	**0.0356**	**0.0281**	**4.0000e-005**		**2.8600e-003**	**2.8600e-003**		**2.7700e-003**	**2.7700e-003**	**0.0000**	**3.6164**	**3.6164**	**6.0000e-004**	**0.0000**	**3.6289**

3.8 Architectural Coating - 2017

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	4.0000e-005	6.0000e-005	5.7000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0718	0.0718	0.0000	0.0000	0.0719
Total	**4.0000e-005**	**6.0000e-005**	**5.7000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0718**	**0.0718**	**0.0000**	**0.0000**	**0.0719**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1506					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9100e-003	0.0356	0.0281	4.0000e-005		2.8600e-003	2.8600e-003		2.7700e-003	2.7700e-003	0.0000	3.6164	3.6164	6.0000e-004	0.0000	3.6289
Total	**0.1556**	**0.0356**	**0.0281**	**4.0000e-005**		**2.8600e-003**	**2.8600e-003**		**2.7700e-003**	**2.7700e-003**	**0.0000**	**3.6164**	**3.6164**	**6.0000e-004**	**0.0000**	**3.6289**

3.8 Architectural Coating - 2017

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	4.0000e-005	6.0000e-005	5.7000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0718	0.0718	0.0000	0.0000	0.0719
Total	**4.0000e-005**	**6.0000e-005**	**5.7000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0718**	**0.0718**	**0.0000**	**0.0000**	**0.0719**

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	0.0859	0.2321	1.0000	1.8800e-003	0.1217	2.8900e-003	0.1246	0.0326	2.6600e-003	0.0353	0.0000	141.0648	141.0648	6.8200e-003	0.0000	141.2080
Unmitigated	0.0859	0.2321	1.0000	1.8800e-003	0.1217	2.8900e-003	0.1246	0.0326	2.6600e-003	0.0353	0.0000	141.0648	141.0648	6.8200e-003	0.0000	141.2080

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	156.00	0.00	0.00	325,317	325,317
Total	156.00	0.00	0.00	325,317	325,317

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
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.463934	0.038758	0.210530	0.164352	0.051306	0.007282	0.016583	0.030323	0.003051	0.002171	0.008186	0.000820	0.002705

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	31.2759	31.2759	1.4100e-003	2.9000e-004	31.3963
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	31.2759	31.2759	1.4100e-003	2.9000e-004	31.3963
NaturalGas Mitigated	1.8000e-003	0.0164	0.0138	1.0000e-004		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003	0.0000	17.8150	17.8150	3.4000e-004	3.3000e-004	17.9234
NaturalGas Unmitigated	1.8000e-003	0.0164	0.0138	1.0000e-004		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003	0.0000	17.8150	17.8150	3.4000e-004	3.3000e-004	17.9234

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					
General Light Industry	333840	1.8000e-003	0.0164	0.0138	1.0000e-004		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003	0.0000	17.8150	17.8150	3.4000e-004	3.3000e-004	17.9234
Total		**1.8000e-003**	**0.0164**	**0.0138**	**1.0000e-004**		**1.2400e-003**	**1.2400e-003**		**1.2400e-003**	**1.2400e-003**	**0.0000**	**17.8150**	**17.8150**	**3.4000e-004**	**3.3000e-004**	**17.9234**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	333840	1.8000e-003	0.0164	0.0138	1.0000e-004		1.2400e-003	1.2400e-003		1.2400e-003	1.2400e-003	0.0000	17.8150	17.8150	3.4000e-004	3.3000e-004	17.9234
Total		**1.8000e-003**	**0.0164**	**0.0138**	**1.0000e-004**		**1.2400e-003**	**1.2400e-003**		**1.2400e-003**	**1.2400e-003**	**0.0000**	**17.8150**	**17.8150**	**3.4000e-004**	**3.3000e-004**	**17.9234**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	107510	31.2759	1.4100e-003	2.9000e-004	31.3963
Total		**31.2759**	**1.4100e-003**	**2.9000e-004**	**31.3963**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	107510	31.2759	1.4100e-003	2.9000e-004	31.3963
Total		**31.2759**	**1.4100e-003**	**2.9000e-004**	**31.3963**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0659	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-004	2.3000e-004	0.0000	0.0000	2.5000e-004
Unmitigated	0.0659	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-004	2.3000e-004	0.0000	0.0000	2.5000e-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	0.0151					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0508					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	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-004	2.3000e-004	0.0000	0.0000	2.5000e-004
Total	**0.0658**	**0.0000**	**1.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.3000e-004**	**2.3000e-004**	**0.0000**	**0.0000**	**2.5000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0151					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0508					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	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-004	2.3000e-004	0.0000	0.0000	2.5000e-004
Total	**0.0658**	**0.0000**	**1.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.3000e-004**	**2.3000e-004**	**0.0000**	**0.0000**	**2.5000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	5.6860	0.0982	2.3500e-003	8.4768
Unmitigated	5.6860	0.0982	2.3600e-003	8.4783

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	3.00625 / 0	5.6860	0.0982	2.3600e-003	8.4783
Total		**5.6860**	**0.0982**	**2.3600e-003**	**8.4783**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	3.00625 / 0	5.6860	0.0982	2.3500e-003	8.4768
Total		**5.6860**	**0.0982**	**2.3500e-003**	**8.4768**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	3.2722	0.1934	0.0000	7.3332
Unmitigated	3.2722	0.1934	0.0000	7.3332

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	16.12	3.2722	0.1934	0.0000	7.3332
Total		**3.2722**	**0.1934**	**0.0000**	**7.3332**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	16.12	3.2722	0.1934	0.0000	7.3332
Total		**3.2722**	**0.1934**	**0.0000**	**7.3332**

9.0 Operational Offroad

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

10.0 Vegetation

UCSC Recycling Yard Phase 2

North Central Coast Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	13.00	1000sqft	0.30	13,000.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.8 **Precipitation Freq (Days)** 53

Climate Zone 5 **Operational Year** 2018

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 641.35 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - size of MRF

Construction Phase - Based on construction schedule provided

Off-road Equipment - 2/5/15 Equip List

Off-road Equipment - 2/5/15 Equip List

Off-road Equipment - 2/5/15 Equipment List

Off-road Equipment - Equipment list 2/5/15

Off-road Equipment - Construction Equipment list

Off-road Equipment - Construction Equip list

Off-road Equipment - Construction equipment list E. Mowbray 2/5/2015

Off-road Equipment - Construction Equip list

Trips and VMT -

Grading - All included in Phase 1

Waste Mitigation -

Vehicle Trips - On-campus trucks (3 at 4x per day)

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	100.00	80.00
tblConstructionPhase	NumDays	10.00	2.00
tblConstructionPhase	NumDays	2.00	20.00
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	1.00	3.00
tblConstructionPhase	PhaseEndDate	4/3/2017	3/13/2017
tblConstructionPhase	PhaseEndDate	2/23/2017	2/10/2017
tblConstructionPhase	PhaseEndDate	3/10/2017	3/6/2017
tblConstructionPhase	PhaseEndDate	11/17/2016	11/3/2016
tblConstructionPhase	PhaseStartDate	3/7/2017	2/14/2017
tblConstructionPhase	PhaseStartDate	11/4/2016	10/24/2016
tblConstructionPhase	PhaseStartDate	2/11/2017	2/7/2017
tblConstructionPhase	PhaseStartDate	10/21/2016	10/7/2016
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	WorkerTripNumber	13.00	10.00
tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	10.00	5.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	12.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	6.1254	56.9895	38.3540	0.0668	0.9171	3.4827	3.6602	0.4574	3.3022	3.3495	0.0000	6,662.7215	6,662.7215	1.5417	0.0000	6,695.0981
2017	20.0683	78.7050	54.2398	0.0927	0.3007	4.6457	4.9463	0.0800	4.3629	4.4429	0.0000	9,173.5443	9,173.5443	2.2662	0.0000	9,221.1340
Total	**26.1936**	**135.6945**	**92.5938**	**0.1595**	**1.2177**	**8.1284**	**8.6065**	**0.5374**	**7.6651**	**7.7924**	**0.0000**	**15,836.2658**	**15,836.2658**	**3.8079**	**0.0000**	**15,916.2320**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	6.1254	56.9895	38.3540	0.0668	0.9171	3.4827	3.6602	0.4574	3.3022	3.3495	0.0000	6,662.7215	6,662.7215	1.5417	0.0000	6,695.0981
2017	20.0683	78.7050	54.2398	0.0927	0.3007	4.6457	4.9463	0.0800	4.3629	4.4429	0.0000	9,173.5443	9,173.5443	2.2662	0.0000	9,221.1340
Total	**26.1936**	**135.6945**	**92.5938**	**0.1595**	**1.2177**	**8.1284**	**8.6065**	**0.5374**	**7.6651**	**7.7924**	**0.0000**	**15,836.2658**	**15,836.2658**	**3.8079**	**0.0000**	**15,916.2320**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3609	1.0000e-005	1.3500e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8500e-003	2.8500e-003	1.0000e-005		3.0100e-003
Energy	9.8600e-003	0.0897	0.0753	5.4000e-004		6.8100e-003	6.8100e-003		6.8100e-003	6.8100e-003		107.6036	107.6036	2.0600e-003	1.9700e-003	108.2584
Mobile	0.7105	1.8709	8.5434	0.0144	0.9662	0.0223	0.9886	0.2582	0.0206	0.2788		1,193.0500	1,193.0500	0.0580		1,194.2669
Total	**1.0813**	**1.9606**	**8.6201**	**0.0150**	**0.9662**	**0.0291**	**0.9954**	**0.2582**	**0.0274**	**0.2856**		**1,300.6564**	**1,300.6564**	**0.0600**	**1.9700e-003**	**1,302.5283**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3609	1.0000e-005	1.3500e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8500e-003	2.8500e-003	1.0000e-005		3.0100e-003
Energy	9.8600e-003	0.0897	0.0753	5.4000e-004		6.8100e-003	6.8100e-003		6.8100e-003	6.8100e-003		107.6036	107.6036	2.0600e-003	1.9700e-003	108.2584
Mobile	0.7105	1.8709	8.5434	0.0144	0.9662	0.0223	0.9886	0.2582	0.0206	0.2788		1,193.0500	1,193.0500	0.0580		1,194.2669
Total	**1.0813**	**1.9606**	**8.6201**	**0.0150**	**0.9662**	**0.0291**	**0.9954**	**0.2582**	**0.0274**	**0.2856**		**1,300.6564**	**1,300.6564**	**0.0600**	**1.9700e-003**	**1,302.5283**

	ROG	NOx	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	Demolition	Demolition	9/16/2016	9/19/2016	5	2	
2	Site Preparation	Site Preparation	9/20/2016	9/22/2016	5	3	
3	Grading	Grading	9/23/2016	10/20/2016	5	20	
4	Trenching	Trenching	10/7/2016	11/3/2016	5	20	
5	Building Construction	Building Construction	10/24/2016	2/10/2017	5	80	
6	Asphalt Paving	Paving	2/7/2017	3/6/2017	5	20	
7	Architectural Coating	Architectural Coating	2/14/2017	3/13/2017	5	20	

Acres of Grading (Site Preparation Phase): 1.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 19,500; Non-Residential Outdoor: 6,500 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Demolition	Rubber Tired Loaders	1	1.00	199	0.36
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37

Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Sweepers/Scrubbers	1	8.00	64	0.46
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Grading	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Trenching	Excavators	1	8.00	162	0.38
Trenching	Forklifts	1	8.00	89	0.20
Trenching	Plate Compactors	1	8.00	8	0.43
Trenching	Rollers	1	8.00	80	0.38
Trenching	Rubber Tired Loaders	1	8.00	199	0.36
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Aerial Lifts	2	8.00	62	0.31
Building Construction	Air Compressors	2	8.00	78	0.48
Building Construction	Bore/Drill Rigs	1	8.00	205	0.50
Building Construction	Cement and Mortar Mixers	1	8.00	9	0.56
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Asphalt Paving	Cement and Mortar Mixers	3	6.00	9	0.56
Asphalt Paving	Graders	1	8.00	174	0.41
Asphalt Paving	Off-Highway Trucks	1	8.00	400	0.38
Asphalt Paving	Other Construction Equipment	1	8.00	171	0.42
Asphalt Paving	Pavers	1	7.00	125	0.42
Asphalt Paving	Rollers	2	7.00	80	0.38
Asphalt Paving	Sweepers/Scrubbers	1	8.00	64	0.46

Asphalt Paving	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Architectural Coating	Forklifts	1	6.00	89	0.20

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
Demolition	5	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	13	5.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Paving	12	30.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3743	12.0463	8.9341	0.0128		0.8314	0.8314		0.7927	0.7927		1,273.1573	1,273.1573	0.2626		1,278.6723
Total	**1.3743**	**12.0463**	**8.9341**	**0.0128**		**0.8314**	**0.8314**		**0.7927**	**0.7927**		**1,273.1573**	**1,273.1573**	**0.2626**		**1,278.6723**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0506	0.0785	0.6848	9.8000e-004	0.0822	8.2000e-004	0.0830	0.0218	7.5000e-004	0.0225		81.9213	81.9213	5.8300e-003		82.0438
Total	**0.0506**	**0.0785**	**0.6848**	**9.8000e-004**	**0.0822**	**8.2000e-004**	**0.0830**	**0.0218**	**7.5000e-004**	**0.0225**		**81.9213**	**81.9213**	**5.8300e-003**		**82.0438**

3.2 Demolition - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3743	12.0463	8.9341	0.0128		0.8314	0.8314		0.7927	0.7927	0.0000	1,273.1573	1,273.1573	0.2626		1,278.6723
Total	**1.3743**	**12.0463**	**8.9341**	**0.0128**		**0.8314**	**0.8314**		**0.7927**	**0.7927**	**0.0000**	**1,273.1573**	**1,273.1573**	**0.2626**		**1,278.6723**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0506	0.0785	0.6848	9.8000e-004	0.0822	8.2000e-004	0.0830	0.0218	7.5000e-004	0.0225		81.9213	81.9213	5.8300e-003		82.0438
Total	**0.0506**	**0.0785**	**0.6848**	**9.8000e-004**	**0.0822**	**8.2000e-004**	**0.0830**	**0.0218**	**7.5000e-004**	**0.0225**		**81.9213**	**81.9213**	**5.8300e-003**		**82.0438**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.7657	16.9861	9.4478	0.0119		1.1301	1.1301		1.0397	1.0397		1,237.0400	1,237.0400	0.3731		1,244.8759
Total	**1.7657**	**16.9861**	**9.4478**	**0.0119**	**0.5303**	**1.1301**	**1.6603**	**0.0573**	**1.0397**	**1.0969**		**1,237.0400**	**1,237.0400**	**0.3731**		**1,244.8759**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0152	0.0235	0.2054	3.0000e-004	0.0246	2.5000e-004	0.0249	6.5400e-003	2.3000e-004	6.7600e-003		24.5764	24.5764	1.7500e-003		24.6132
Total	**0.0152**	**0.0235**	**0.2054**	**3.0000e-004**	**0.0246**	**2.5000e-004**	**0.0249**	**6.5400e-003**	**2.3000e-004**	**6.7600e-003**		**24.5764**	**24.5764**	**1.7500e-003**		**24.6132**

3.3 Site Preparation - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.7657	16.9861	9.4478	0.0119		1.1301	1.1301		1.0397	1.0397	0.0000	1,237.040 0	1,237.040 0	0.3731		1,244.875 9
Total	**1.7657**	**16.9861**	**9.4478**	**0.0119**	**0.5303**	**1.1301**	**1.6603**	**0.0573**	**1.0397**	**1.0969**	**0.0000**	**1,237.040 0**	**1,237.040 0**	**0.3731**		**1,244.875 9**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0152	0.0235	0.2054	3.0000e-004	0.0246	2.5000e-004	0.0249	6.5400e-003	2.3000e-004	6.7600e-003		24.5764	24.5764	1.7500e-003		24.6132
Total	**0.0152**	**0.0235**	**0.2054**	**3.0000e-004**	**0.0246**	**2.5000e-004**	**0.0249**	**6.5400e-003**	**2.3000e-004**	**6.7600e-003**		**24.5764**	**24.5764**	**1.7500e-003**		**24.6132**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	1.4632	12.1483	9.0029	0.0122		0.9122	0.9122		0.8670	0.8670		1,214.8085	1,214.8085	0.2450		1,219.9539
Total	**1.4632**	**12.1483**	**9.0029**	**0.0122**	**0.7528**	**0.9122**	**1.6650**	**0.4138**	**0.8670**	**1.2808**		**1,214.8085**	**1,214.8085**	**0.2450**		**1,219.9539**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0253	0.0392	0.3424	4.9000e-004	0.0411	4.1000e-004	0.0415	0.0109	3.8000e-004	0.0113		40.9607	40.9607	2.9200e-003		41.0219
Total	**0.0253**	**0.0392**	**0.3424**	**4.9000e-004**	**0.0411**	**4.1000e-004**	**0.0415**	**0.0109**	**3.8000e-004**	**0.0113**		**40.9607**	**40.9607**	**2.9200e-003**		**41.0219**

3.4 Grading - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	1.4632	12.1483	9.0029	0.0122		0.9122	0.9122		0.8670	0.8670	0.0000	1,214.8085	1,214.8085	0.2450		1,219.9539
Total	**1.4632**	**12.1483**	**9.0029**	**0.0122**	**0.7528**	**0.9122**	**1.6650**	**0.4138**	**0.8670**	**1.2808**	**0.0000**	**1,214.8085**	**1,214.8085**	**0.2450**		**1,219.9539**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0253	0.0392	0.3424	4.9000e-004	0.0411	4.1000e-004	0.0415	0.0109	3.8000e-004	0.0113		40.9607	40.9607	2.9200e-003		41.0219
Total	**0.0253**	**0.0392**	**0.3424**	**4.9000e-004**	**0.0411**	**4.1000e-004**	**0.0415**	**0.0109**	**3.8000e-004**	**0.0113**		**40.9607**	**40.9607**	**2.9200e-003**		**41.0219**

3.5 Trenching - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8295	19.4663	11.1628	0.0192		1.0914	1.0914		1.0049	1.0049		1,975.6485	1,975.6485	0.5891		1,988.0197
Total	**1.8295**	**19.4663**	**11.1628**	**0.0192**		**1.0914**	**1.0914**		**1.0049**	**1.0049**		**1,975.6485**	**1,975.6485**	**0.5891**		**1,988.0197**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0760	0.1177	1.0271	1.4800e-003	0.1232	1.2400e-003	0.1245	0.0327	1.1300e-003	0.0338		122.8820	122.8820	8.7500e-003		123.0658
Total	**0.0760**	**0.1177**	**1.0271**	**1.4800e-003**	**0.1232**	**1.2400e-003**	**0.1245**	**0.0327**	**1.1300e-003**	**0.0338**		**122.8820**	**122.8820**	**8.7500e-003**		**123.0658**

3.5 Trenching - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8295	19.4663	11.1628	0.0192		1.0914	1.0914		1.0049	1.0049	0.0000	1,975.6485	1,975.6485	0.5891		1,988.0197
Total	**1.8295**	**19.4663**	**11.1628**	**0.0192**		**1.0914**	**1.0914**		**1.0049**	**1.0049**	**0.0000**	**1,975.6485**	**1,975.6485**	**0.5891**		**1,988.0197**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0760	0.1177	1.0271	1.4800e-003	0.1232	1.2400e-003	0.1245	0.0327	1.1300e-003	0.0338		122.8820	122.8820	8.7500e-003		123.0658
Total	**0.0760**	**0.1177**	**1.0271**	**1.4800e-003**	**0.1232**	**1.2400e-003**	**0.1245**	**0.0327**	**1.1300e-003**	**0.0338**		**122.8820**	**122.8820**	**8.7500e-003**		**123.0658**

3.6 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.1616	37.1624	25.3689	0.0452		2.3863	2.3863		2.2928	2.2928		4,476.6045	4,476.6045	0.9406		4,496.3564
Total	**4.1616**	**37.1624**	**25.3689**	**0.0452**		**2.3863**	**2.3863**		**2.2928**	**2.2928**		**4,476.6045**	**4,476.6045**	**0.9406**		**4,496.3564**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0330	0.2039	0.4528	4.7000e-004	0.0132	3.3500e-003	0.0165	3.7400e-003	3.0800e-003	6.8200e-003		46.6259	46.6259	4.0000e-004		46.6343
Worker	0.0253	0.0392	0.3424	4.9000e-004	0.0411	4.1000e-004	0.0415	0.0109	3.8000e-004	0.0113		40.9607	40.9607	2.9200e-003		41.0219
Total	**0.0583**	**0.2432**	**0.7951**	**9.6000e-004**	**0.0542**	**3.7600e-003**	**0.0580**	**0.0146**	**3.4600e-003**	**0.0181**		**87.5865**	**87.5865**	**3.3200e-003**		**87.6562**

3.6 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.1616	37.1624	25.3689	0.0452		2.3863	2.3863		2.2928	2.2928	0.0000	4,476.6045	4,476.6045	0.9406		4,496.3564
Total	**4.1616**	**37.1624**	**25.3689**	**0.0452**		**2.3863**	**2.3863**		**2.2928**	**2.2928**	**0.0000**	**4,476.6045**	**4,476.6045**	**0.9406**		**4,496.3564**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0330	0.2039	0.4528	4.7000e-004	0.0132	3.3500e-003	0.0165	3.7400e-003	3.0800e-003	6.8200e-003		46.6259	46.6259	4.0000e-004		46.6343
Worker	0.0253	0.0392	0.3424	4.9000e-004	0.0411	4.1000e-004	0.0415	0.0109	3.8000e-004	0.0113		40.9607	40.9607	2.9200e-003		41.0219
Total	**0.0583**	**0.2432**	**0.7951**	**9.6000e-004**	**0.0542**	**3.7600e-003**	**0.0580**	**0.0146**	**3.4600e-003**	**0.0181**		**87.5865**	**87.5865**	**3.3200e-003**		**87.6562**

3.6 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.7694	33.9583	25.0276	0.0452		2.1206	2.1206		2.0372	2.0372		4,437.8021	4,437.8021	0.9179		4,457.0769
Total	**3.7694**	**33.9583**	**25.0276**	**0.0452**		**2.1206**	**2.1206**		**2.0372**	**2.0372**		**4,437.8021**	**4,437.8021**	**0.9179**		**4,457.0769**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0288	0.1809	0.4216	4.7000e-004	0.0132	2.8400e-003	0.0160	3.7400e-003	2.6100e-003	6.3500e-003		45.8379	45.8379	3.7000e-004		45.8457
Worker	0.0219	0.0350	0.3012	4.9000e-004	0.0411	3.9000e-004	0.0415	0.0109	3.6000e-004	0.0113		39.4033	39.4033	2.6500e-003		39.4588
Total	**0.0507**	**0.2158**	**0.7228**	**9.6000e-004**	**0.0542**	**3.2300e-003**	**0.0575**	**0.0146**	**2.9700e-003**	**0.0176**		**85.2412**	**85.2412**	**3.0200e-003**		**85.3045**

3.6 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.7694	33.9583	25.0276	0.0452		2.1206	2.1206		2.0372	2.0372	0.0000	4,437.8021	4,437.8021	0.9179		4,457.0769
Total	**3.7694**	**33.9583**	**25.0276**	**0.0452**		**2.1206**	**2.1206**		**2.0372**	**2.0372**	**0.0000**	**4,437.8021**	**4,437.8021**	**0.9179**		**4,457.0769**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0288	0.1809	0.4216	4.7000e-004	0.0132	2.8400e-003	0.0160	3.7400e-003	2.6100e-003	6.3500e-003		45.8379	45.8379	3.7000e-004		45.8457
Worker	0.0219	0.0350	0.3012	4.9000e-004	0.0411	3.9000e-004	0.0415	0.0109	3.6000e-004	0.0113		39.4033	39.4033	2.6500e-003		39.4588
Total	**0.0507**	**0.2158**	**0.7228**	**9.6000e-004**	**0.0542**	**3.2300e-003**	**0.0575**	**0.0146**	**2.9700e-003**	**0.0176**		**85.2412**	**85.2412**	**3.0200e-003**		**85.3045**

3.7 Asphalt Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.3783	44.3212	26.6819	0.0436		2.5195	2.5195		2.3206	2.3206		4,414.0813	4,414.0813	1.3294		4,441.9995
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.3783**	**44.3212**	**26.6819**	**0.0436**		**2.5195**	**2.5195**		**2.3206**	**2.3206**		**4,414.0813**	**4,414.0813**	**1.3294**		**4,441.9995**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1313	0.2098	1.8074	2.9500e-003	0.2464	2.3300e-003	0.2488	0.0654	2.1400e-003	0.0675		236.4198	236.4198	0.0159		236.7531
Total	**0.1313**	**0.2098**	**1.8074**	**2.9500e-003**	**0.2464**	**2.3300e-003**	**0.2488**	**0.0654**	**2.1400e-003**	**0.0675**		**236.4198**	**236.4198**	**0.0159**		**236.7531**

3.7 Asphalt Paving - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.3783	44.3212	26.6819	0.0436		2.5195	2.5195		2.3206	2.3206	0.0000	4,414.0813	4,414.0813	1.3294		4,441.9995
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.3783**	**44.3212**	**26.6819**	**0.0436**		**2.5195**	**2.5195**		**2.3206**	**2.3206**	**0.0000**	**4,414.0813**	**4,414.0813**	**1.3294**		**4,441.9995**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1313	0.2098	1.8074	2.9500e-003	0.2464	2.3300e-003	0.2488	0.0654	2.1400e-003	0.0675		236.4198	236.4198	0.0159		236.7531
Total	**0.1313**	**0.2098**	**1.8074**	**2.9500e-003**	**0.2464**	**2.3300e-003**	**0.2488**	**0.0654**	**2.1400e-003**	**0.0675**		**236.4198**	**236.4198**	**0.0159**		**236.7531**

3.8 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.0638					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4905	3.5548	2.8049	4.1200e-003		0.2864	0.2864		0.2773	0.2773		398.6391	398.6391	0.0656		400.0172
Total	**15.5543**	**3.5548**	**2.8049**	**4.1200e-003**		**0.2864**	**0.2864**		**0.2773**	**0.2773**		**398.6391**	**398.6391**	**0.0656**		**400.0172**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.3800e-003	6.9900e-003	0.0603	1.0000e-004	8.2100e-003	8.0000e-005	8.2900e-003	2.1800e-003	7.0000e-005	2.2500e-003		7.8807	7.8807	5.3000e-004		7.8918
Total	**4.3800e-003**	**6.9900e-003**	**0.0603**	**1.0000e-004**	**8.2100e-003**	**8.0000e-005**	**8.2900e-003**	**2.1800e-003**	**7.0000e-005**	**2.2500e-003**		**7.8807**	**7.8807**	**5.3000e-004**		**7.8918**

3.8 Architectural Coating - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.0638					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4905	3.5548	2.8049	4.1200e-003		0.2864	0.2864		0.2773	0.2773	0.0000	398.6391	398.6391	0.0656		400.0172
Total	**15.5543**	**3.5548**	**2.8049**	**4.1200e-003**		**0.2864**	**0.2864**		**0.2773**	**0.2773**	**0.0000**	**398.6391**	**398.6391**	**0.0656**		**400.0172**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.3800e-003	6.9900e-003	0.0603	1.0000e-004	8.2100e-003	8.0000e-005	8.2900e-003	2.1800e-003	7.0000e-005	2.2500e-003		7.8807	7.8807	5.3000e-004		7.8918
Total	**4.3800e-003**	**6.9900e-003**	**0.0603**	**1.0000e-004**	**8.2100e-003**	**8.0000e-005**	**8.2900e-003**	**2.1800e-003**	**7.0000e-005**	**2.2500e-003**		**7.8807**	**7.8807**	**5.3000e-004**		**7.8918**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.7105	1.8709	8.5434	0.0144	0.9662	0.0223	0.9886	0.2582	0.0206	0.2788		1,193.0500	1,193.0500	0.0580		1,194.2669
Unmitigated	0.7105	1.8709	8.5434	0.0144	0.9662	0.0223	0.9886	0.2582	0.0206	0.2788		1,193.0500	1,193.0500	0.0580		1,194.2669

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	156.00	0.00	0.00	325,317	325,317
Total	156.00	0.00	0.00	325,317	325,317

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
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.463934	0.038758	0.210530	0.164352	0.051306	0.007282	0.016583	0.030323	0.003051	0.002171	0.008186	0.000820	0.002705

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	9.8600e-003	0.0897	0.0753	5.4000e-004		6.8100e-003	6.8100e-003		6.8100e-003	6.8100e-003		107.6036	107.6036	2.0600e-003	1.9700e-003	108.2584
NaturalGas Unmitigated	9.8600e-003	0.0897	0.0753	5.4000e-004		6.8100e-003	6.8100e-003		6.8100e-003	6.8100e-003		107.6036	107.6036	2.0600e-003	1.9700e-003	108.2584

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	914.63	9.8600e-003	0.0897	0.0753	5.4000e-004		6.8100e-003	6.8100e-003		6.8100e-003	6.8100e-003		107.6036	107.6036	2.0600e-003	1.9700e-003	108.2584
Total		**9.8600e-003**	**0.0897**	**0.0753**	**5.4000e-004**		**6.8100e-003**	**6.8100e-003**		**6.8100e-003**	**6.8100e-003**		**107.6036**	**107.6036**	**2.0600e-003**	**1.9700e-003**	**108.2584**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.91463	9.8600e-003	0.0897	0.0753	5.4000e-004		6.8100e-003	6.8100e-003		6.8100e-003	6.8100e-003		107.6036	107.6036	2.0600e-003	1.9700e-003	108.2584
Total		**9.8600e-003**	**0.0897**	**0.0753**	**5.4000e-004**		**6.8100e-003**	**6.8100e-003**		**6.8100e-003**	**6.8100e-003**		**107.6036**	**107.6036**	**2.0600e-003**	**1.9700e-003**	**108.2584**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3609	1.0000e-005	1.3500e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8500e-003	2.8500e-003	1.0000e-005		3.0100e-003
Unmitigated	0.3609	1.0000e-005	1.3500e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8500e-003	2.8500e-003	1.0000e-005		3.0100e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0825					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2782					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3000e-004	1.0000e-005	1.3500e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8500e-003	2.8500e-003	1.0000e-005		3.0100e-003
Total	**0.3609**	**1.0000e-005**	**1.3500e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.8500e-003**	**2.8500e-003**	**1.0000e-005**		**3.0100e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0825					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2782					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3000e-004	1.0000e-005	1.3500e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8500e-003	2.8500e-003	1.0000e-005		3.0100e-003
Total	**0.3609**	**1.0000e-005**	**1.3500e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.8500e-003**	**2.8500e-003**	**1.0000e-005**		**3.0100e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

UCSC Recycling Yard Phase 2

North Central Coast Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	13.00	1000sqft	0.30	13,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.8	**Precipitation Freq (Days)**	53
Climate Zone	5			**Operational Year**	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - size of MRF

Construction Phase - Based on construction schedule provided

Off-road Equipment - 2/5/15 Equip List

Off-road Equipment - 2/5/15 Equip List

Off-road Equipment - 2/5/15 Equipment List

Off-road Equipment - Equipment list 2/5/15

Off-road Equipment - Construction Equipment list

Off-road Equipment - Construction Equip list

Off-road Equipment - Construction equipment list E. Mowbray 2/5/2015

Off-road Equipment - Construction Equip list

Trips and VMT -

Grading - All included in Phase 1

Waste Mitigation -

Vehicle Trips - On-campus trucks (3 at 4x per day)

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	100.00	80.00
tblConstructionPhase	NumDays	10.00	2.00
tblConstructionPhase	NumDays	2.00	20.00
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	1.00	3.00
tblConstructionPhase	PhaseEndDate	4/3/2017	3/13/2017
tblConstructionPhase	PhaseEndDate	2/23/2017	2/10/2017
tblConstructionPhase	PhaseEndDate	3/10/2017	3/6/2017
tblConstructionPhase	PhaseEndDate	11/17/2016	11/3/2016
tblConstructionPhase	PhaseStartDate	3/7/2017	2/14/2017
tblConstructionPhase	PhaseStartDate	11/4/2016	10/24/2016
tblConstructionPhase	PhaseStartDate	2/11/2017	2/7/2017
tblConstructionPhase	PhaseStartDate	10/21/2016	10/7/2016
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	WorkerTripNumber	13.00	10.00
tblTripsAndVMT	WorkerTripNumber	8.00	3.00
tblTripsAndVMT	WorkerTripNumber	10.00	5.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	12.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	6.1113	56.9481	38.1075	0.0669	0.9171	3.4827	3.6601	0.4574	3.3022	3.3495	0.0000	6,673.2431	6,673.2431	1.5417	0.0000	6,705.6194
2017	20.0610	78.6469	53.9871	0.0929	0.3007	4.6456	4.9463	0.0800	4.3628	4.4428	0.0000	9,191.0440	9,191.0440	2.2662	0.0000	9,238.6335
Total	**26.1722**	**135.5951**	**92.0946**	**0.1598**	**1.2177**	**8.1283**	**8.6064**	**0.5374**	**7.6650**	**7.7923**	**0.0000**	**15,864.2871**	**15,864.2871**	**3.8079**	**0.0000**	**15,944.2530**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	6.1113	56.9481	38.1075	0.0669	0.9171	3.4827	3.6601	0.4574	3.3022	3.3495	0.0000	6,673.2431	6,673.2431	1.5417	0.0000	6,705.6194
2017	20.0610	78.6469	53.9871	0.0929	0.3007	4.6456	4.9463	0.0800	4.3628	4.4428	0.0000	9,191.0440	9,191.0440	2.2662	0.0000	9,238.6335
Total	**26.1722**	**135.5951**	**92.0946**	**0.1598**	**1.2177**	**8.1283**	**8.6064**	**0.5374**	**7.6650**	**7.7923**	**0.0000**	**15,864.2871**	**15,864.2871**	**3.8079**	**0.0000**	**15,944.2529**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3609	1.0000e-005	1.3500e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8500e-003	2.8500e-003	1.0000e-005		3.0100e-003
Energy	9.8600e-003	0.0897	0.0753	5.4000e-004		6.8100e-003	6.8100e-003		6.8100e-003	6.8100e-003		107.6036	107.6036	2.0600e-003	1.9700e-003	108.2584
Mobile	0.6531	1.6575	7.2900	0.0151	0.9662	0.0222	0.9884	0.2582	0.0205	0.2787		1,247.5846	1,247.5846	0.0579		1,248.8005
Total	**1.0239**	**1.7471**	**7.3667**	**0.0156**	**0.9662**	**0.0290**	**0.9953**	**0.2582**	**0.0273**	**0.2855**		**1,355.1910**	**1,355.1910**	**0.0600**	**1.9700e-003**	**1,357.0619**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3609	1.0000e-005	1.3500e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8500e-003	2.8500e-003	1.0000e-005		3.0100e-003
Energy	9.8600e-003	0.0897	0.0753	5.4000e-004		6.8100e-003	6.8100e-003		6.8100e-003	6.8100e-003		107.6036	107.6036	2.0600e-003	1.9700e-003	108.2584
Mobile	0.6531	1.6575	7.2900	0.0151	0.9662	0.0222	0.9884	0.2582	0.0205	0.2787		1,247.5846	1,247.5846	0.0579		1,248.8005
Total	**1.0239**	**1.7471**	**7.3667**	**0.0156**	**0.9662**	**0.0290**	**0.9953**	**0.2582**	**0.0273**	**0.2855**		**1,355.1910**	**1,355.1910**	**0.0600**	**1.9700e-003**	**1,357.0619**

	ROG	NOx	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	Demolition	Demolition	9/16/2016	9/19/2016	5	2	
2	Site Preparation	Site Preparation	9/20/2016	9/22/2016	5	3	
3	Grading	Grading	9/23/2016	10/20/2016	5	20	
4	Trenching	Trenching	10/7/2016	11/3/2016	5	20	
5	Building Construction	Building Construction	10/24/2016	2/10/2017	5	80	
6	Asphalt Paving	Paving	2/7/2017	3/6/2017	5	20	
7	Architectural Coating	Architectural Coating	2/14/2017	3/13/2017	5	20	

Acres of Grading (Site Preparation Phase): 1.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 19,500; Non-Residential Outdoor: 6,500 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Demolition	Rubber Tired Loaders	1	1.00	199	0.36
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37

Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Sweepers/Scrubbers	1	8.00	64	0.46
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Grading	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Trenching	Excavators	1	8.00	162	0.38
Trenching	Forklifts	1	8.00	89	0.20
Trenching	Plate Compactors	1	8.00	8	0.43
Trenching	Rollers	1	8.00	80	0.38
Trenching	Rubber Tired Loaders	1	8.00	199	0.36
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Aerial Lifts	2	8.00	62	0.31
Building Construction	Air Compressors	2	8.00	78	0.48
Building Construction	Bore/Drill Rigs	1	8.00	205	0.50
Building Construction	Cement and Mortar Mixers	1	8.00	9	0.56
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Asphalt Paving	Cement and Mortar Mixers	3	6.00	9	0.56
Asphalt Paving	Graders	1	8.00	174	0.41
Asphalt Paving	Off-Highway Trucks	1	8.00	400	0.38
Asphalt Paving	Other Construction Equipment	1	8.00	171	0.42
Asphalt Paving	Pavers	1	7.00	125	0.42
Asphalt Paving	Rollers	2	7.00	80	0.38
Asphalt Paving	Sweepers/Scrubbers	1	8.00	64	0.46

Asphalt Paving	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Architectural Coating	Forklifts	1	6.00	89	0.20

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
Demolition	5	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	13	5.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Paving	12	30.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3743	12.0463	8.9341	0.0128		0.8314	0.8314		0.7927	0.7927		1,273.1573	1,273.1573	0.2626		1,278.6723
Total	**1.3743**	**12.0463**	**8.9341**	**0.0128**		**0.8314**	**0.8314**		**0.7927**	**0.7927**		**1,273.1573**	**1,273.1573**	**0.2626**		**1,278.6723**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0475	0.0626	0.6563	1.0400e-003	0.0822	8.2000e-004	0.0830	0.0218	7.5000e-004	0.0225		87.0003	87.0003	5.8300e-003		87.1228
Total	**0.0475**	**0.0626**	**0.6563**	**1.0400e-003**	**0.0822**	**8.2000e-004**	**0.0830**	**0.0218**	**7.5000e-004**	**0.0225**		**87.0003**	**87.0003**	**5.8300e-003**		**87.1228**

3.2 Demolition - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3743	12.0463	8.9341	0.0128		0.8314	0.8314		0.7927	0.7927	0.0000	1,273.1573	1,273.1573	0.2626		1,278.6723
Total	**1.3743**	**12.0463**	**8.9341**	**0.0128**		**0.8314**	**0.8314**		**0.7927**	**0.7927**	**0.0000**	**1,273.1573**	**1,273.1573**	**0.2626**		**1,278.6723**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0475	0.0626	0.6563	1.0400e-003	0.0822	8.2000e-004	0.0830	0.0218	7.5000e-004	0.0225		87.0003	87.0003	5.8300e-003		87.1228
Total	**0.0475**	**0.0626**	**0.6563**	**1.0400e-003**	**0.0822**	**8.2000e-004**	**0.0830**	**0.0218**	**7.5000e-004**	**0.0225**		**87.0003**	**87.0003**	**5.8300e-003**		**87.1228**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.7657	16.9861	9.4478	0.0119		1.1301	1.1301		1.0397	1.0397		1,237.040 0	1,237.040 0	0.3731		1,244.875 9
Total	**1.7657**	**16.9861**	**9.4478**	**0.0119**	**0.5303**	**1.1301**	**1.6603**	**0.0573**	**1.0397**	**1.0969**		**1,237.040 0**	**1,237.040 0**	**0.3731**		**1,244.875 9**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0142	0.0188	0.1969	3.1000e-004	0.0246	2.5000e-004	0.0249	6.5400e-003	2.3000e-004	6.7600e-003		26.1001	26.1001	1.7500e-003		26.1368
Total	**0.0142**	**0.0188**	**0.1969**	**3.1000e-004**	**0.0246**	**2.5000e-004**	**0.0249**	**6.5400e-003**	**2.3000e-004**	**6.7600e-003**		**26.1001**	**26.1001**	**1.7500e-003**		**26.1368**

3.3 Site Preparation - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/day								lb/day			
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.7657	16.9861	9.4478	0.0119		1.1301	1.1301		1.0397	1.0397	0.0000	1,237.040 0	1,237.040 0	0.3731		1,244.875 9
Total	**1.7657**	**16.9861**	**9.4478**	**0.0119**	**0.5303**	**1.1301**	**1.6603**	**0.0573**	**1.0397**	**1.0969**	**0.0000**	**1,237.040 0**	**1,237.040 0**	**0.3731**		**1,244.875 9**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/day								lb/day			
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0142	0.0188	0.1969	3.1000e-004	0.0246	2.5000e-004	0.0249	6.5400e-003	2.3000e-004	6.7600e-003		26.1001	26.1001	1.7500e-003		26.1368
Total	**0.0142**	**0.0188**	**0.1969**	**3.1000e-004**	**0.0246**	**2.5000e-004**	**0.0249**	**6.5400e-003**	**2.3000e-004**	**6.7600e-003**		**26.1001**	**26.1001**	**1.7500e-003**		**26.1368**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	1.4632	12.1483	9.0029	0.0122		0.9122	0.9122		0.8670	0.8670		1,214.8085	1,214.8085	0.2450		1,219.9539
Total	**1.4632**	**12.1483**	**9.0029**	**0.0122**	**0.7528**	**0.9122**	**1.6650**	**0.4138**	**0.8670**	**1.2808**		**1,214.8085**	**1,214.8085**	**0.2450**		**1,219.9539**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0237	0.0313	0.3282	5.2000e-004	0.0411	4.1000e-004	0.0415	0.0109	3.8000e-004	0.0113		43.5001	43.5001	2.9200e-003		43.5614
Total	**0.0237**	**0.0313**	**0.3282**	**5.2000e-004**	**0.0411**	**4.1000e-004**	**0.0415**	**0.0109**	**3.8000e-004**	**0.0113**		**43.5001**	**43.5001**	**2.9200e-003**		**43.5614**

3.4 Grading - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	1.4632	12.1483	9.0029	0.0122		0.9122	0.9122		0.8670	0.8670	0.0000	1,214.808 5	1,214.808 5	0.2450		1,219.953 9
Total	**1.4632**	**12.1483**	**9.0029**	**0.0122**	**0.7528**	**0.9122**	**1.6650**	**0.4138**	**0.8670**	**1.2808**	**0.0000**	**1,214.808 5**	**1,214.808 5**	**0.2450**		**1,219.953 9**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0237	0.0313	0.3282	5.2000e-004	0.0411	4.1000e-004	0.0415	0.0109	3.8000e-004	0.0113		43.5001	43.5001	2.9200e-003		43.5614
Total	**0.0237**	**0.0313**	**0.3282**	**5.2000e-004**	**0.0411**	**4.1000e-004**	**0.0415**	**0.0109**	**3.8000e-004**	**0.0113**		**43.5001**	**43.5001**	**2.9200e-003**		**43.5614**

3.5 Trenching - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8295	19.4663	11.1628	0.0192		1.0914	1.0914		1.0049	1.0049		1,975.6485	1,975.6485	0.5891		1,988.0197
Total	**1.8295**	**19.4663**	**11.1628**	**0.0192**		**1.0914**	**1.0914**		**1.0049**	**1.0049**		**1,975.6485**	**1,975.6485**	**0.5891**		**1,988.0197**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0712	0.0939	0.9845	1.5700e-003	0.1232	1.2400e-003	0.1245	0.0327	1.1300e-003	0.0338		130.5004	130.5004	8.7500e-003		130.6842
Total	**0.0712**	**0.0939**	**0.9845**	**1.5700e-003**	**0.1232**	**1.2400e-003**	**0.1245**	**0.0327**	**1.1300e-003**	**0.0338**		**130.5004**	**130.5004**	**8.7500e-003**		**130.6842**

3.5 Trenching - 2016

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Off-Road	1.8295	19.4663	11.1628	0.0192		1.0914	1.0914		1.0049	1.0049	0.0000	1,975.6485	1,975.6485	0.5891		1,988.0197
Total	**1.8295**	**19.4663**	**11.1628**	**0.0192**		**1.0914**	**1.0914**		**1.0049**	**1.0049**	**0.0000**	**1,975.6485**	**1,975.6485**	**0.5891**		**1,988.0197**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0712	0.0939	0.9845	1.5700e-003	0.1232	1.2400e-003	0.1245	0.0327	1.1300e-003	0.0338		130.5004	130.5004	8.7500e-003		130.6842
Total	**0.0712**	**0.0939**	**0.9845**	**1.5700e-003**	**0.1232**	**1.2400e-003**	**0.1245**	**0.0327**	**1.1300e-003**	**0.0338**		**130.5004**	**130.5004**	**8.7500e-003**		**130.6842**

3.6 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.1616	37.1624	25.3689	0.0452		2.3863	2.3863		2.2928	2.2928		4,476.6045	4,476.6045	0.9406		4,496.3564
Total	**4.1616**	**37.1624**	**25.3689**	**0.0452**		**2.3863**	**2.3863**		**2.2928**	**2.2928**		**4,476.6045**	**4,476.6045**	**0.9406**		**4,496.3564**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0253	0.1943	0.2632	4.7000e-004	0.0132	3.3100e-003	0.0165	3.7400e-003	3.0400e-003	6.7800e-003		46.9895	46.9895	3.9000e-004		46.9977
Worker	0.0237	0.0313	0.3282	5.2000e-004	0.0411	4.1000e-004	0.0415	0.0109	3.8000e-004	0.0113		43.5001	43.5001	2.9200e-003		43.5614
Total	**0.0490**	**0.2256**	**0.5914**	**9.9000e-004**	**0.0542**	**3.7200e-003**	**0.0580**	**0.0146**	**3.4200e-003**	**0.0181**		**90.4896**	**90.4896**	**3.3100e-003**		**90.5591**

3.6 Building Construction - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.1616	37.1624	25.3689	0.0452		2.3863	2.3863		2.2928	2.2928	0.0000	4,476.6045	4,476.6045	0.9406		4,496.3564
Total	**4.1616**	**37.1624**	**25.3689**	**0.0452**		**2.3863**	**2.3863**		**2.2928**	**2.2928**	**0.0000**	**4,476.6045**	**4,476.6045**	**0.9406**		**4,496.3564**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0253	0.1943	0.2632	4.7000e-004	0.0132	3.3100e-003	0.0165	3.7400e-003	3.0400e-003	6.7800e-003		46.9895	46.9895	3.9000e-004		46.9977
Worker	0.0237	0.0313	0.3282	5.2000e-004	0.0411	4.1000e-004	0.0415	0.0109	3.8000e-004	0.0113		43.5001	43.5001	2.9200e-003		43.5614
Total	**0.0490**	**0.2256**	**0.5914**	**9.9000e-004**	**0.0542**	**3.7200e-003**	**0.0580**	**0.0146**	**3.4200e-003**	**0.0181**		**90.4896**	**90.4896**	**3.3100e-003**		**90.5591**

3.6 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.7694	33.9583	25.0276	0.0452		2.1206	2.1206		2.0372	2.0372		4,437.8021	4,437.8021	0.9179		4,457.0769
Total	**3.7694**	**33.9583**	**25.0276**	**0.0452**		**2.1206**	**2.1206**		**2.0372**	**2.0372**		**4,437.8021**	**4,437.8021**	**0.9179**		**4,457.0769**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0223	0.1725	0.2382	4.7000e-004	0.0132	2.8000e-003	0.0160	3.7400e-003	2.5700e-003	6.3100e-003		46.1969	46.1969	3.6000e-004		46.2045
Worker	0.0207	0.0279	0.2913	5.2000e-004	0.0411	3.9000e-004	0.0415	0.0109	3.6000e-004	0.0113		41.8520	41.8520	2.6500e-003		41.9075
Total	**0.0430**	**0.2003**	**0.5295**	**9.9000e-004**	**0.0542**	**3.1900e-003**	**0.0574**	**0.0146**	**2.9300e-003**	**0.0176**		**88.0489**	**88.0489**	**3.0100e-003**		**88.1120**

3.6 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.7694	33.9583	25.0276	0.0452		2.1206	2.1206		2.0372	2.0372	0.0000	4,437.8021	4,437.8021	0.9179		4,457.0769
Total	**3.7694**	**33.9583**	**25.0276**	**0.0452**		**2.1206**	**2.1206**		**2.0372**	**2.0372**	**0.0000**	**4,437.8021**	**4,437.8021**	**0.9179**		**4,457.0769**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0223	0.1725	0.2382	4.7000e-004	0.0132	2.8000e-003	0.0160	3.7400e-003	2.5700e-003	6.3100e-003		46.1969	46.1969	3.6000e-004		46.2045
Worker	0.0207	0.0279	0.2913	5.2000e-004	0.0411	3.9000e-004	0.0415	0.0109	3.6000e-004	0.0113		41.8520	41.8520	2.6500e-003		41.9075
Total	**0.0430**	**0.2003**	**0.5295**	**9.9000e-004**	**0.0542**	**3.1900e-003**	**0.0574**	**0.0146**	**2.9300e-003**	**0.0176**		**88.0489**	**88.0489**	**3.0100e-003**		**88.1120**

3.7 Asphalt Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.3783	44.3212	26.6819	0.0436		2.5195	2.5195		2.3206	2.3206		4,414.0813	4,414.0813	1.3294		4,441.9995
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.3783**	**44.3212**	**26.6819**	**0.0436**		**2.5195**	**2.5195**		**2.3206**	**2.3206**		**4,414.0813**	**4,414.0813**	**1.3294**		**4,441.9995**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1242	0.1672	1.7480	3.1300e-003	0.2464	2.3300e-003	0.2488	0.0654	2.1400e-003	0.0675		251.1118	251.1118	0.0159		251.4451
Total	**0.1242**	**0.1672**	**1.7480**	**3.1300e-003**	**0.2464**	**2.3300e-003**	**0.2488**	**0.0654**	**2.1400e-003**	**0.0675**		**251.1118**	**251.1118**	**0.0159**		**251.4451**

3.7 Asphalt Paving - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.3783	44.3212	26.6819	0.0436		2.5195	2.5195		2.3206	2.3206	0.0000	4,414.0813	4,414.0813	1.3294		4,441.9995
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**4.3783**	**44.3212**	**26.6819**	**0.0436**		**2.5195**	**2.5195**		**2.3206**	**2.3206**	**0.0000**	**4,414.0813**	**4,414.0813**	**1.3294**		**4,441.9995**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1242	0.1672	1.7480	3.1300e-003	0.2464	2.3300e-003	0.2488	0.0654	2.1400e-003	0.0675		251.1118	251.1118	0.0159		251.4451
Total	**0.1242**	**0.1672**	**1.7480**	**3.1300e-003**	**0.2464**	**2.3300e-003**	**0.2488**	**0.0654**	**2.1400e-003**	**0.0675**		**251.1118**	**251.1118**	**0.0159**		**251.4451**

3.8 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.0638					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4905	3.5548	2.8049	4.1200e-003		0.2864	0.2864		0.2773	0.2773		398.6391	398.6391	0.0656		400.0172
Total	**15.5543**	**3.5548**	**2.8049**	**4.1200e-003**		**0.2864**	**0.2864**		**0.2773**	**0.2773**		**398.6391**	**398.6391**	**0.0656**		**400.0172**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.1400e-003	5.5700e-003	0.0583	1.0000e-004	8.2100e-003	8.0000e-005	8.2900e-003	2.1800e-003	7.0000e-005	2.2500e-003		8.3704	8.3704	5.3000e-004		8.3815
Total	**4.1400e-003**	**5.5700e-003**	**0.0583**	**1.0000e-004**	**8.2100e-003**	**8.0000e-005**	**8.2900e-003**	**2.1800e-003**	**7.0000e-005**	**2.2500e-003**		**8.3704**	**8.3704**	**5.3000e-004**		**8.3815**

3.8 Architectural Coating - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.0638					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4905	3.5548	2.8049	4.1200e-003		0.2864	0.2864		0.2773	0.2773	0.0000	398.6391	398.6391	0.0656		400.0172
Total	**15.5543**	**3.5548**	**2.8049**	**4.1200e-003**		**0.2864**	**0.2864**		**0.2773**	**0.2773**	**0.0000**	**398.6391**	**398.6391**	**0.0656**		**400.0172**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	4.1400e-003	5.5700e-003	0.0583	1.0000e-004	8.2100e-003	8.0000e-005	8.2900e-003	2.1800e-003	7.0000e-005	2.2500e-003		8.3704	8.3704	5.3000e-004		8.3815
Total	**4.1400e-003**	**5.5700e-003**	**0.0583**	**1.0000e-004**	**8.2100e-003**	**8.0000e-005**	**8.2900e-003**	**2.1800e-003**	**7.0000e-005**	**2.2500e-003**		**8.3704**	**8.3704**	**5.3000e-004**		**8.3815**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.6531	1.6575	7.2900	0.0151	0.9662	0.0222	0.9884	0.2582	0.0205	0.2787		1,247.5846	1,247.5846	0.0579		1,248.8005
Unmitigated	0.6531	1.6575	7.2900	0.0151	0.9662	0.0222	0.9884	0.2582	0.0205	0.2787		1,247.5846	1,247.5846	0.0579		1,248.8005

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	156.00	0.00	0.00	325,317	325,317
Total	156.00	0.00	0.00	325,317	325,317

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
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.463934	0.038758	0.210530	0.164352	0.051306	0.007282	0.016583	0.030323	0.003051	0.002171	0.008186	0.000820	0.002705

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	9.8600e-003	0.0897	0.0753	5.4000e-004		6.8100e-003	6.8100e-003		6.8100e-003	6.8100e-003		107.6036	107.6036	2.0600e-003	1.9700e-003	108.2584
NaturalGas Unmitigated	9.8600e-003	0.0897	0.0753	5.4000e-004		6.8100e-003	6.8100e-003		6.8100e-003	6.8100e-003		107.6036	107.6036	2.0600e-003	1.9700e-003	108.2584

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	914.63	9.8600e-003	0.0897	0.0753	5.4000e-004		6.8100e-003	6.8100e-003		6.8100e-003	6.8100e-003		107.6036	107.6036	2.0600e-003	1.9700e-003	108.2584
Total		**9.8600e-003**	**0.0897**	**0.0753**	**5.4000e-004**		**6.8100e-003**	**6.8100e-003**		**6.8100e-003**	**6.8100e-003**		**107.6036**	**107.6036**	**2.0600e-003**	**1.9700e-003**	**108.2584**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.91463	9.8600e-003	0.0897	0.0753	5.4000e-004		6.8100e-003	6.8100e-003		6.8100e-003	6.8100e-003		107.6036	107.6036	2.0600e-003	1.9700e-003	108.2584
Total		**9.8600e-003**	**0.0897**	**0.0753**	**5.4000e-004**		**6.8100e-003**	**6.8100e-003**		**6.8100e-003**	**6.8100e-003**		**107.6036**	**107.6036**	**2.0600e-003**	**1.9700e-003**	**108.2584**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3609	1.0000e-005	1.3500e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8500e-003	2.8500e-003	1.0000e-005		3.0100e-003
Unmitigated	0.3609	1.0000e-005	1.3500e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8500e-003	2.8500e-003	1.0000e-005		3.0100e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0825					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2782					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3000e-004	1.0000e-005	1.3500e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8500e-003	2.8500e-003	1.0000e-005		3.0100e-003
Total	**0.3609**	**1.0000e-005**	**1.3500e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.8500e-003**	**2.8500e-003**	**1.0000e-005**		**3.0100e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0825					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2782					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3000e-004	1.0000e-005	1.3500e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.8500e-003	2.8500e-003	1.0000e-005		3.0100e-003
Total	**0.3609**	**1.0000e-005**	**1.3500e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.8500e-003**	**2.8500e-003**	**1.0000e-005**		**3.0100e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

Truck Trip Reduction

North Central Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.8 **Precipitation Freq (Days)** 53

Climate Zone 5 **Operational Year** 2017

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 641.35 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase -

Off-road Equipment -

Trips and VMT - Full Year of Reduced Mileage

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	HaulingTripLength	20.00	3,460.00
tblTripsAndVMT	HaulingTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripLength	7.30	0.00
tblTripsAndVMT	WorkerTripLength	10.80	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00

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					
2016	1.6800e-003	0.0280	0.0107	7.0000e-005	1.7300e-003	7.7000e-004	2.5000e-003	4.3000e-004	7.1000e-004	1.1400e-003	0.0000	6.1733	6.1733	1.7000e-004	0.0000	6.1769
Total	**1.6800e-003**	**0.0280**	**0.0107**	**7.0000e-005**	**1.7300e-003**	**7.7000e-004**	**2.5000e-003**	**4.3000e-004**	**7.1000e-004**	**1.1400e-003**	**0.0000**	**6.1733**	**6.1733**	**1.7000e-004**	**0.0000**	**6.1769**

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					
2016	1.6800e-003	0.0280	0.0107	7.0000e-005	1.7300e-003	7.7000e-004	2.5000e-003	4.3000e-004	7.1000e-004	1.1400e-003	0.0000	6.1733	6.1733	1.7000e-004	0.0000	6.1769
Total	**1.6800e-003**	**0.0280**	**0.0107**	**7.0000e-005**	**1.7300e-003**	**7.7000e-004**	**2.5000e-003**	**4.3000e-004**	**7.1000e-004**	**1.1400e-003**	**0.0000**	**6.1733**	**6.1733**	**1.7000e-004**	**0.0000**	**6.1769**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	5.0700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.0700e-003**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	5.0700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.0700e-003**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/15/2016	1/15/2016	5	1	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	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 Preparation	2	0.00	0.00	1.00	0.00	0.00	3,460.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2016

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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.8000e-004	6.8200e-003	3.6700e-003	0.0000		4.2000e-004	4.2000e-004		3.8000e-004	3.8000e-004	0.0000	0.4414	0.4414	1.3000e-004	0.0000	0.4442
Total	**6.8000e-004**	**6.8200e-003**	**3.6700e-003**	**0.0000**	**2.7000e-004**	**4.2000e-004**	**6.9000e-004**	**3.0000e-005**	**3.8000e-004**	**4.1000e-004**	**0.0000**	**0.4414**	**0.4414**	**1.3000e-004**	**0.0000**	**0.4442**

3.2 Site Preparation - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-003	0.0212	7.0500e-003	6.0000e-005	1.4600e-003	3.5000e-004	1.8200e-003	4.0000e-004	3.2000e-004	7.3000e-004	0.0000	5.7319	5.7319	4.0000e-005	0.0000	5.7327
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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.0000e-003**	**0.0212**	**7.0500e-003**	**6.0000e-005**	**1.4600e-003**	**3.5000e-004**	**1.8200e-003**	**4.0000e-004**	**3.2000e-004**	**7.3000e-004**	**0.0000**	**5.7319**	**5.7319**	**4.0000e-005**	**0.0000**	**5.7327**

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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.8000e-004	6.8200e-003	3.6700e-003	0.0000		4.2000e-004	4.2000e-004		3.8000e-004	3.8000e-004	0.0000	0.4414	0.4414	1.3000e-004	0.0000	0.4442
Total	**6.8000e-004**	**6.8200e-003**	**3.6700e-003**	**0.0000**	**2.7000e-004**	**4.2000e-004**	**6.9000e-004**	**3.0000e-005**	**3.8000e-004**	**4.1000e-004**	**0.0000**	**0.4414**	**0.4414**	**1.3000e-004**	**0.0000**	**0.4442**

3.2 Site Preparation - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-003	0.0212	7.0500e-003	6.0000e-005	1.4600e-003	3.5000e-004	1.8200e-003	4.0000e-004	3.2000e-004	7.3000e-004	0.0000	5.7319	5.7319	4.0000e-005	0.0000	5.7327
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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.0000e-003**	**0.0212**	**7.0500e-003**	**6.0000e-005**	**1.4600e-003**	**3.5000e-004**	**1.8200e-003**	**4.0000e-004**	**3.2000e-004**	**7.3000e-004**	**0.0000**	**5.7319**	**5.7319**	**4.0000e-005**	**0.0000**	**5.7327**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.464236	0.038779	0.210624	0.164455	0.051413	0.007282	0.016457	0.029840	0.003038	0.002180	0.008160	0.000830	0.002706

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					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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**

5.2 Energy by Land Use - NaturalGas

Mitigated

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

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	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	5.0700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	5.0700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.1600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**5.0700e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.1600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**5.0700e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation

Greenhouse Gas Emission Worksheet

N20 Mobile Emissions UCSC Truck Trip Reduction

From URBEMIS 2007 Vehicle Fleet Mix Output:

Annual VMT: 3,460

Vehicle Type	Percent Type	CH4 Emission Factor (g/mile)*	CH4 Emission (g/mile)**	N2O Emission Factor (g/mile)*	N2O Emission (g/mile)**
Light Auto	0.0%	0.04	0	0.04	0
Light Truck < 3750 lbs	0.0%	0.05	0	0.06	0
Light Truck 3751-5750 lbs	0.0%	0.05	0	0.06	0
Med Truck 5751-8500 lbs	0.0%	0.12	0	0.2	0
Lite-Heavy Truck 8501-10,000 lbs	0.0%	0.12	0	0.2	0
Lite-Heavy Truck 10,001-14,000 lbs	0.0%	0.09	0	0.125	0
Med-Heavy Truck 14,001-33,000 lbs	0.0%	0.06	0	0.05	0
Heavy-Heavy Truck 33,001-60,000 lbs	100.0%	0.06	0.06	0.05	0.05
Other Bus	0.0%	0.06	0	0.05	0
Urban Bus	0.0%	0.06	0	0.05	0
Motorcycle	0.0%	0.09	0	0.01	0
School Bus	0.0%	0.06	0	0.05	0
Motor Home	0.0%	0.09	0	0.125	0
Total	**100.0%**		**0.06**		**0.05**

Total Emissions (metric tons) =
Emission Factor by Vehicle Mix (g/mi) x Annual VMT(mi) x 0.000001 metric tons/g

Conversion to Carbon Dioxide Equivalency (CO2e) Units based on Global Warming Potential (GWP)

CH4	21	GWP
N2O	310	GWP
1 ton (short, US) =	0.90718474	metric ton

Annual Mobile Emissions:

	Total Emissions		Total CO2e units	
N20 Emissions:	0.0002	metric tons N2O	**0.05**	metric tons CO2e
		Project Total:	***0.05***	***metric tons CO2e***

References

* from Table C.4: Methane and Nitrous Oxide Emission Factors for Mobile Sources by Vehicle and Fuel Type (g/mile).
in California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009.
Assume Model year 2000-present, gasoline fueled.

** Source: California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009.

*** From URBEMIS 2007 results for mobile sources

Energy Use

0.524	lbs CO_2 per kWh
11,200	kwh for baler (400 tons of material)
76,913	kwh composter (24 hrs/day)
3	**annual MT CO_2 (baler)**
18	**annual MT CO_2 (composter)**
70	**annual MT CO_2 (Grinder)**
91	MT CO_2/yr

*Source: PG&E Carbon Footprint Calculator Assumptions.
Available online at: http://www.pge.com/includes/docs/pdfs/about/environment/calculator/assumptions.pdf

Equipment

Baler	28	kwh/ton
Composter	8.78	kwh/hour of operation
Grinder	246	pounds CO_2 per hour

RotoChopper GHG Emissions

246.9439481	lbs/hr
154093.0236	lbs/4 hours/3 days/week (1 year of use)
77	short tons per year
70	MT CO_2/yr

Appendix E

Biological Resources Reports

April 8, 2014

Alisa Klaus
University of California, Santa Cruz
Physical Planning and Construction
1156 High Street
Santa Cruz, CA 95064

RE: Results of Botanical Review of Proposed Consolidated Material Recovery Facility, Bowl Area

Dear Ms. Klaus,

The Biotic Resources Group conducted a botanical review of an area north of the arboretum that is proposed for a material recovery and compost facility (Bowl Area), as per your request. The review was focused on identifying the location of native grass stands within the proposed facility area. The results of this field review are described herein.

BACKGROUND AND SURVEY METHODOLOGY

The biological resources within the proposed recovery facility study area were mapped in 2001 (UCSC Farm and Garden Expansion Sites, Biotic Assessment, BRG, 2001). In 2001 one stand of native bunchgrasses was documented within the proposed recovery study area; the proposed recovery area is located within the eastern portion of what was then referred to as "Area D". The native grass stands were documented within a grassland area and were comprised of *Nassella spp.* (currently known as *Stipa spp.)* and *Danthonia californica*.

Kathleen Lyons, plant ecologist, conducted a site visit of the proposed material recovery facility area (Bowl Area) on April 6, 2014. Systematic walking surveys were conducted to detect native grass stands. The area previously identified as supporting stands of *Nassella (*now *Stipa)* and *Danthonia californica* were walked as well as other portions of the proposed facility area were inspected for native grasses. Where native grass stands were observed their location was marked on an aerial photo (source: Google, 2013). In addition, an aerial photo of the area, dated 2001, was reviewed to detect any changes in vegetation patterns.

RESULTS

The majority of the proposed recovery facility study area currently supports grassland that is comprised of a dense growth of non-native grasses and forbs. This is similar to the condition documented in 2001. The proposed recovery facility area also supports groves of Monterey cypress (*Cupressus marcrocarpa)* trees and a large patch of coyote brush scrub. The extent of the cypress grove has increased since 2001. The scrub, dominated by coyote brush (*Baccharis pilularis)*, has established on site since 2001 and occupies most of the area previously mapped as supporting native grass stands. The understory within the scrub is comprised of annual grasses and forbs; one small patch of *Stipa pulchra* was observed amid the shrubs (see Figure 1). Additional patches of native grasses were observed in the recovery area. As depicted on Figure 1, these patches are confined to the edge of the existing roadway and appear to be growing within areas that are periodically mowed.

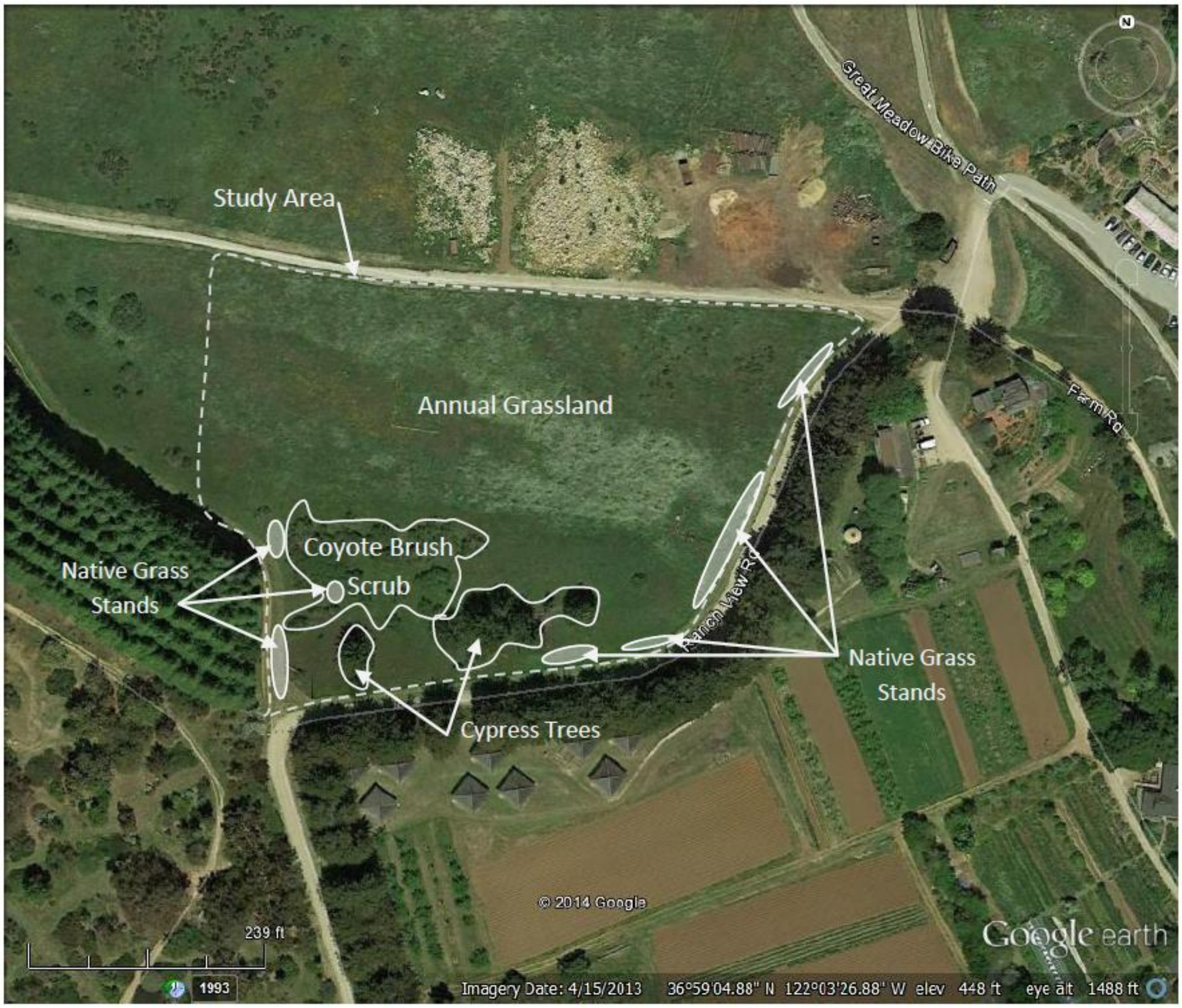

Figure 1. Distribution of vegetation types, including native grass stands, April 2014.

Thank you for the opportunity to assist you in your project planning. Please give me a call if you have any questions on these findings.

Sincerely,

Kathleen Lyons

Kathleen Lyons
Plant Ecologist

BIOSEARCH
ASSOCIATES

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- Environmental Consulting
- Endangered Species Surveys

11 February 2015

Alisa Klaus
Physical Planning & Construction
University of California, Santa Cruz
1156 High Street
Santa Cruz, CA 95064

Subject: Special-status Wildlife Habitat Assessment for Recycling Yard and Bike Lane Improvement Project.

Dear Alisa,

This letter provides an updated habitat assessment for special-status wildlife for the Recycling Yard and Bike Lane Improvement Project at the University of California, Santa Cruz (UCSC). The project site was assessed in 2001 as one of six potential Farm and Garden Expansion Sites (*UCSC Farm and Garden Expansion Sites Biological Assessment; Prepared by Biotic Resources Group; 9 July 2001*). The Recycling Yard covers the same footprint as Area D in the 2001 assessment. It will be combined with an adjacent Bike Lane Improvement Project such that the combined project totals approximately 8 acres.

Biotic Resources Group recently updated the botanical component of the original 2001 assessment. This document updates and expands the wildlife component of the original 2001 assessment, and includes an assessment of potential impacts to the federally-threatened California red-legged frog (*Rana draytonii*).

Methods. Wildlife biologist David Laabs visited the site on 20 January 2015. Wildlife habitats were identified, characterized and photographed. The surrounding land use and connectivity to native habitats was analyzed. Unique habitat features and observations of special-status species were mapped. Although focused surveys were not performed, all wildlife species observed or detected by sign were recorded.

Locality records and relevant literature regarding the target species were reviewed. An updated record search of the California Natural Diversity Data Base (CNDDB) maintained by the California Department of Fish and Wildlife (CDFW) was conducted. Biologists who have worked in the area were contacted for information regarding species occurrences. The original biological assessment for the project was reviewed (*UCSC Farm and Garden Expansion Sites Biological Assessment; Prepared by Biotic Resources Group; 9 July 2001*)

For purposes of this assessment, special-status wildlife species include the following: those listed as Threatened or Endangered under the federal Endangered Species Act (ESA); species for which USFWS has sufficient information to list as Endangered or Threatened, but for which listing is precluded (Candidate Species); those species for which a proposed rule to list as Endangered or Threatened has been published (Proposed species); species listed by U. S. Fish and Wildlife Service (USFWS) as Birds of Conservation Concern (in Region 32); species listed as Threatened or Endangered under the California Endangered Species Act (CESA); those species that are Candidates for listing under CESA; species designated by California Department of Fish and Wildlife (CDFW) as Species of Special Concern; and species listed as "fully protected birds", "fully protected mammals, "fully protected reptiles and amphibians" and "fully protected fish" under the California Fish and Game Code. In addition, certain species considered to meet the criteria for endangered, threatened or rare species included in Section 15830 of the California Environmental Quality Act (CEQA) Guidelines are also considered. This includes those species listed as High Priority by the Western Bat Working Group (WBWG). A comprehensive Special Animals list is maintained and periodically updated by CDFW (CDFW 2011).

Results. Conditions at the project site appeared to be similar to those described in the 2001 Biological Assessment. The site is dominated by grassland habitat that consists of mostly non-native annuals and perennials. The southwestern border of site, along the access road, supports native bunch grasses. Patches of coyote brush and a small stand of cypress are present in the southern part of the site. Small mammal burrows, including those of California ground squirrels (*Otospermophilus beecheyi*) and Botta's pocket gopher (*Thomomys bottae*), are present throughout the site. An old concrete foundation and water trough are present in the middle of the site, reflecting a history of disturbance. Conditions at the Bike Path Improvement portion of the project are similar to those found in Area D.

The project site is adjacent to the UCSC Farm and Garden and the UCSC Arboretum. A large grove of planted redwoods borders the site to the southwest, while a line of introduced cypress trees borders it to the southeast. Lands to the north are largely undisturbed grassland. Dirt roads border the site on the north and south. The area receives a high level of human activity, with daily foot and bicycle traffic along the adjacent roads and along the bike path. The most significant change in recent years was conversion of the area immediately to the north of the project site to a construction materials storage area, which also receives regular vehicle and heavy equipment traffic.

Numerous special-status wildlife species are known from the vicinity of the project site (Table 1). As outlined in the 2001 assessment, the site is not suitable for most of these species due to a combination of unsuitable habitat conditions and the high level of human activity in the area.

The 2001 assessment did not address the California red-legged frog, which is listed as Threatened under the Federal Endangered Species Act and as a Species of Special Concern by CDFW. The species is known from the East Fork of Moore Creek, and was seen in September 2014 ~0.2 mile to the NW (*Special-status Wildlife surveys and Monitoring for Infrastructure Improvements Phase 2 Project, University of California Santa Cruz; Prepared by Biosearch Associates; Dated 14 November 2014*). Breeding by the species was documented in 1999 and 2000 at the Arboretum Dam Pond, ~0.2 mile SW (*Biological Monitoring Compliance Report, Campus Drainage and Erosion Control (Phase I), Arboretum Dam Project, University of California Santa Cruz; Prepared by Biosearch Wildlife Surveys; Dated July 2000*). No breeding or non-breeding aquatic habitats are present on the site. During the dry season, red-legged frogs are generally restricted to areas in close proximity to aquatic habitats. However, the species can move into uplands during infrequent summer rains or in response to drying of occupied habitats. During the rainy season (October to March), red-legged frogs will move overland up to two miles regardless of habitat between breeding and non-breeding aquatic habitats.

There are several species of special-status raptors known from the vicinity, including golden eagle (*Aquila chryseatos*), white-tailed kite (*Elanus leucurus*) and northern harrier (*Circus cyaneus*), but none are expected to nest on the site itself due to a lack of nesting sites micro-habitat and the high level of human activity in the area. Although marginal nesting habitat it present for the northern harrier on the grassland onsite, the species is not expected to nest due the regular level of disturbance during the nesting season. The site provides suitable foraging habitat for raptors that nest in the vicinity.

The burrowing owl (*Athene cunicularia*), a CDFW Species of Special Concern and USFWS Bird of Conservation Concern, winters on the lower UCSC campus. It has been observed at several locations nearby and two individuals were seen ~1/4 mile north of the site on 17 and 31 January 2015 (*eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. Available at: http://www.ebird.org.*). As noted in the 2001 assessment, the species has not nested on the UCSC campus since1987, and the species is not expected during the nesting season. Potential wintering habitat is present onsite, wherever California ground squirrels are present.

Several special-status passerines are known from the lower campus area of UC Santa Cruz. Most of these species are not expected to nest onsite due to a lack of nesting sites and the high level of human activity in the area. However, potential nesting habitat is present onsite for two grassland species: grasshopper sparrow (*Ammodramus savannarum*) and Belding's savannah sparrow (*Passerculus sandwichensis alaudinus*).

The site does not provide suitable roosting habitat for any special-status bats. No suitable diurnal or maternal roosting sites for pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), Western red bat (*Lasiurus blossevilli*), fringed myotis (*Myotis thysanodes*) or long-legged myotis (*Myotis volans*) are present on the site.

The San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) is designated as a Species of Special Concern by CDFW. It is present in suitable habitats throughout the lower campus area, including in Moore Creek to the east of the site. Marginal habitat for the species is present in the coyote brush and cypress trees in the southern part of the site.

The American badger (*Taxidea taxus*) is designated as a Species of Special Concern by the California Department of Fish and Game (CDFW). An American badger carcass was found in 2004 near the East Remote Parking Lot, approximately 0.3 miles to the NNE (CNDDB). The grassland onsite provides suitable habitat for this species.

Discussion. As described in the 2001 habitat assessment, the project site is highly disturbed, and the presence of most special-status wildlife species is unlikely. However, suitable habitat is present for burrowing owl, grasshopper sparrow, Belding's savannah sparrow, San Francisco dusky-footed woodrat and American badger.

While there is no aquatic habitat for the California red-legged frog on the site, breeding and non-breeding habitat for the species occurs along the East Fork of Moore Creek, 0.2 miles to the west. Given the proximity of occupied aquatic habitat, the species could occur on the site while moving between breeding and non-breeding habitats during fall and winter rains.

Pre-activity surveys are recommended prior to ground disturbance for wintering burrowing owls, nesting grasshopper sparrows and Belding's savannah sparrows, San Francisco dusky-footed woodrat houses, and American badger dens. If construction is performed during the wet season (October – March), measures to minimize potential impacts to California red-legged frogs, such as biological monitoring and exclusion fencing, may be appropriate. If special-status species are present, CDFW and/or USFWS should be contacted for guidance.

Please contact me if you have questions or require additional information.

Best regards,

David Laabs
Wildlife Biologist

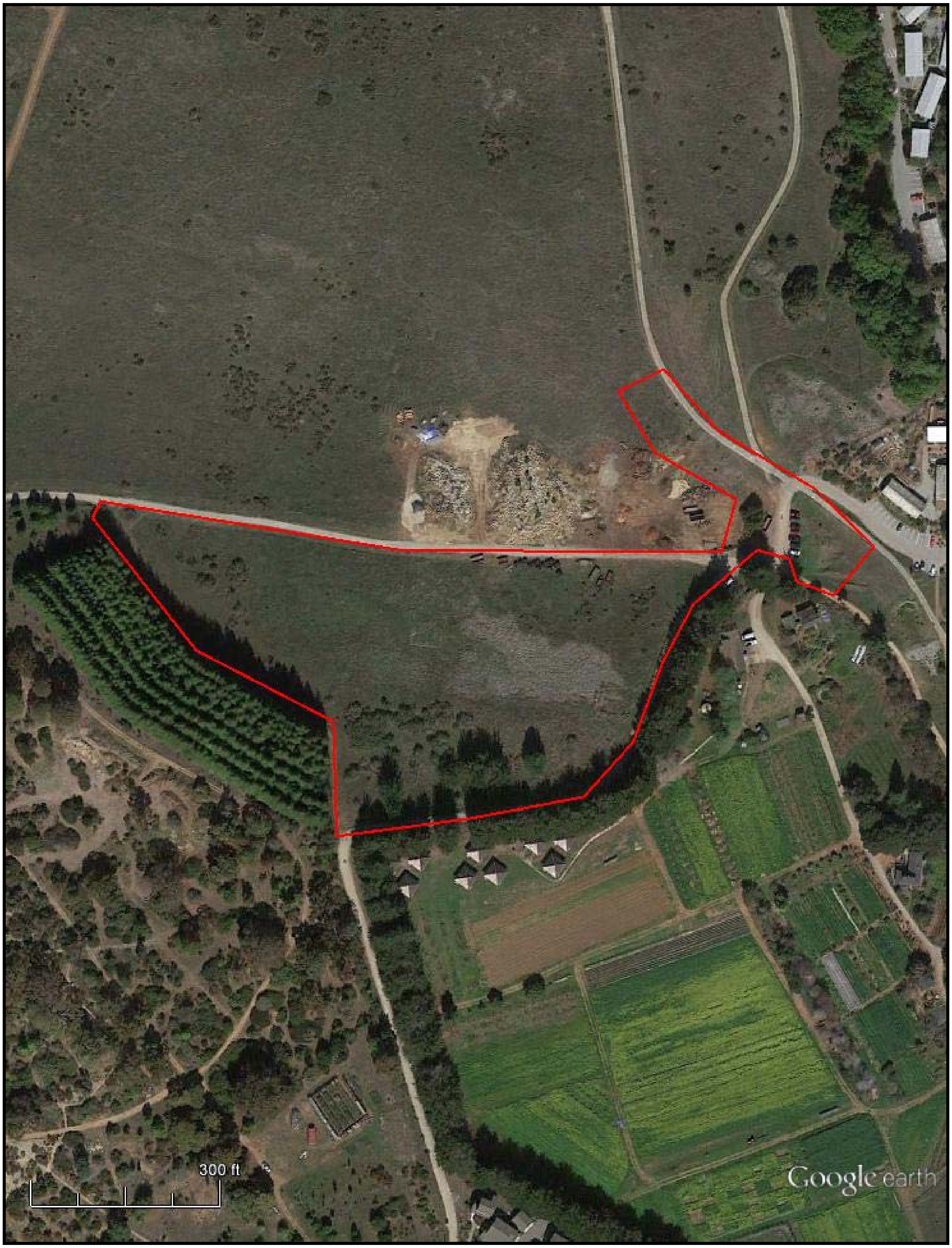

Figure 1. Recycling Yard/Bike Path Improvement Project Area.

Table 1. Special-status wildlife with potential to occur in the vicinity of UCSC Farm and Garden Expansion Area/Bike Lane Improvement Project, University of California, Santa Cruz.

Common Name *Scientific Name*	**Status (Federal / State/Other)**	**General Habitat Requirements**	**Potential for Occurrence**
AMPHIBIANS			
California red-legged frog *Rana draytonii*	FT/ SSC	Breeds in ponds, freshwater marshes, slow-moving creeks.	Breeding and non-breeding aquatic habitat 0.2 mi W in East Fork Moore Creek; species may cross site during overland movements in winter
REPTILES			
Western pond turtle *Emys marmorata*	-/ SSC	Ponds, creeks and rivers; nests and winters in grasslands.	No suitable habitat present
Coast horned lizard *Phrynosoma blainvilii*	-/ SSC	Sandy soils in chaparral, grasslands and open woodlands. Feeds primarily on native ants.	No suitable habitat present
BIRDS			
Golden eagle *Aquila chryseatos* (nesting and wintering)	-/ FP	Nests in large trees and cliffs; forages in open habitats.	No suitable nesting habitat present
Northern harrier *Circus cyaneus* (nesting)	-/ SSC	Nests on ground in marsh and grassland habitats.	Suitable nesting habitat present, but not expected to nest due to high levels of activity
White-tailed kite *Elanus leucurus* (nesting)	-/ FP	Nests in trees; forage in open habitats; may roost in colonies at night.	No suitable nesting habitat present
Long-eared owl *Asio otus* (nesting)	-/ SSC	Nests in open woodland and coniferous forests, often near riparian areas.	No suitable nesting habitat present
Burrowing owl *Athene cunicularia*	BBC/ SSC	Nests and winters in grasslands and open scrub with suitable burrows.	Observed ~1/4 mi N of site in January 2015; potential wintering habitat present; has not nested on campus since 1987

Common Name *Scientific Name*	**Status (Federal / State/Other)**	**General Habitat Requirements**	**Potential for Occurrence**
Vaux's swift *Chaetura vauxi* (nesting)	-/ SSC	Nest in snags, sometimes chimneys of residences.	No suitable nesting habitat present
Allen's hummingbird *Selasphorus sasin* (nesting)	BCC/ -	Nests in narrow coastal belt in woodland and scrub habitats.	Known from lower UCSC campus; no suitable nesting habitat present
Nuttall's woodpecker *Picoides nuttallii* (nesting)	BCC/ -	Nests in oak woodland and along riparian corridors.	Known from lower UCSC campus; no suitable nesting habitat
Olive-sided flycatcher *Contopus cooperi* (nesting)	BCC/ -	Nests primarily in coniferous forests with open canopy; also uses Eucalyptus forest along coast.	Known from lower UCSC campus; no suitable nesting habitat present
Loggerhead shrike *Lanius ludovicianus* (nesting)	BCC/ SSC	Nests in isolated trees and shrubs; forages in open habitats.	Known to winter in lower UCSC campus; not expected during nesting season
Oak titmouse *Baeolophus inornatus* (nesting)	BCC/ -	Nests in oak, oak-pine and pinyon-juniper woodland.	Known from lower UCSC campus; no suitable nesting habitat
Yellow warbler *Setophaga petechia brewsteri* (nesting)	BCC/ SSC	Nests in deciduous riparian woodlands along streams and lakes.	Known from vicinity during migration; No nesting habitat present
Grasshopper sparrow *Ammodramus savannarum* (nesting)	-/ SSC	Nests in short- to mid-height open grasslands.	Nests on lower UCSC Campus; potential nesting habitat in grassland
Bryant’s savannah sparrow *Passerculus sandwichensis alaudinus*	-/ SSC	Nests in tidally influenced habitats and moist grasslands in coastal fog belt.	Winters on lower UCSC Campus; potential nesting habitat in grassland

Common Name *Scientific Name*	**Status (Federal / State/Other)**	**General Habitat Requirements**	**Potential for Occurrence**
Tricolored blackbird *Agelaius tricolor* (nesting colony)	BCC/ SSC	Nest in colonies in fresh-water marshes, dense brambles and extensive patches of thistle; forage in grasslands.	No suitable nesting habitat
Lawrence's goldfinch *Spinus lawrencei* (nesting)	BCC/ -	Dry, open scrub and woodland habitats.	Winters on lower UCSC Campus; not expected during nesting season
MAMMALS			
Pallid bat *Antrozous pallidus*	-/ SSC/ WBWG	Roosts in caves, trees and buildings; forages in variety of habitats.	No roosting habitat present
Townsend's big-eared bat *Corynorhinus townsendii*	-/ Candidate/ WBWG	Roosts in caves, buildings, hollow redwoods; forages in many habitats.	No roosting habitat present
Western red bat *Lasiurus blossevilli*	-/ SSC/ WBWG	Roosts in foliage of trees and shrubs in riparian habitats.	No roosting habitat present
Fringed myotis *Myotis thysanodes*	-/ -/ WBWG	Maternity roosts in bridge crevices, tree cavities and under exfoliating bark.	No roosting habitat present
Long-legged myotis *Myotis volans*	-/ -/ WBWG	Roosts in trees, rock crevices, mines and buildings.	No roosting habitat present
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	-/ SSC	Deciduous and mixed woodlands, scrub, thickets, riparian corridors.	Marginal habitat present in coyote brush
American badger *Taxidea taxus*	-/ SSC	Variety of open habitats especially grassland, oak savanna, coyote-bush scrub.	Suitable habitat present in grassland

Status Codes:

Federal -	FE	Listed as Endangered under Federal Endangered Species Act (ESA)
	FT	Listed as Threatened under ESA
	FC	Candidate for listing under ESA
	BCC	Fish and Wildlife Service Birds of Conservation Concern (Region 32)
State -	SE	Listed as Endangered under California Endangered Species Act (CESA)
	ST	Listed as Threatened under CESA
	FP	Fully Protected Species under Fish and Game Code of California
	SSC	Species of Special Concern designated by California Department of Fish and Wildlife
Other -	WBWG	Listed as High Priority by Western Bat Working Group

Appendix F

Responses to Comments on the

Draft Initial Study/Mitigated Negative Declaration

REC'D APR 14 2015

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

April 9, 2015

Alisa Klaus
University of California
PP&C, 1156 High Street
Santa Cruz, CA 95064

Subject: Recycling Yard and Great Meadow Bike Path Projects
SCH#: 2015032032

Dear Alisa Klaus:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. The review period closed on April 8, 2015, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan

Scott Morgan
Director, State Clearinghouse

Document Details Report
State Clearinghouse Data Base

SCH#	**2015032032**
Project Title	Recycling Yard and Great Meadow Bike Path Projects
Lead Agency	University of California

Type	**MND** Mitigated Negative Declaration
Description	The Recycling Yard Project would construct, in two phases, a 6-acre material recovery facility to accommodate all existing Campus waste recovery services and future composting operations. The Bike Path Project consists of modifications to improve bicycle safety at the intersection of the existing Great Meadow Bike Path and Village Road.

Lead Agency Contact

Name	Alisa Klaus				
Agency	University of California				
Phone	831 459 3732	*Fax*			
email					
Address	PP&C, 1156 High Street				
City	Santa Cruz	*State*	CA	*Zip*	95064

Project Location

County	Santa Cruz						
City	Santa Cruz						
Region							
Lat / Long	36° 59' 5.17" N / 122° 3' 28.7" W						
Cross Streets	High Street / Bay Drive						
Parcel No.	001-011-13						
Township	11S	*Range*	2W	*Section*		*Base*	MDB&M

Proximity to:

Highways	Hwy 1, 17, 9
Airports	
Railways	
Waterways	Moore Creek, Jordan Gulch, San Lorenzo River
Schools	Westlake ES
Land Use	Campus Support (under UC Santa Cruz 2005 Long Range Development Plan)

Project Issues	Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Landuse; Cumulative Effects; Other Issues

Reviewing Agencies	Resources Agency; Department of Fish and Wildlife, Region 3; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Resources, Recycling and Recovery; California Highway Patrol; Caltrans, District 5; Air Resources Board; Regional Water Quality Control Board, Region 3; Native American Heritage Commission

Date Received	03/10/2015	*Start of Review*	03/10/2015	*End of Review*	04/08/2015

Note: Blanks in data fields result from insufficient information provided by lead agency.

Comment Letter SA-1

California Environmental Protection Agency

Edmund G. Brown, Jr., Governor

CalRecycle

DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY

1001 I STREET, SACRAMENTO, CALIFORNIA 95814 • WWW.CALRECYCLE.CA.GOV • (916) 322-4027

P.O. BOX 4025, SACRAMENTO, CALIFORNIA 95812

April 8, 2015

Alisa Klaus, Senior Environmental Planner
Office of Physical Planning & Construction
University of California Santa Cruz
1156 High Street, Barn G
Santa Cruz, CA 95064

RECEIVED
APR 08 2015
STATE CLEARING HOUSE

Subject: Draft Initial Study/Mitigated Negative Declaration - University of California Santa Cruz Recycling Yard and Great Meadows Bike Path, Santa Cruz County

Dear Ms. Klaus:

Thank you for allowing the Department of Resources Recycling and Recovery (CalRecycle) staff to provide comments for this proposed project and for your agency's consideration of these comments as part of the California Environmental Quality Act (CEQA) process.

Project Description

The Regents of the University of California, acting as Lead Agency, has prepared and circulated a Draft Initial Study/Mitigated Negative Declaration (IS/MND) in order to comply with the CEQA and to provide information to, and solicit consultation with, Responsible Agencies in the approval of the proposed project.

The proposed project is located at the meadow area north of UCSC Farm, University of California Santa Cruz main campus, Santa Cruz, CA. The proposed project would: (1) allow the consolidation of the existing recycling operations on campus; (2) allow the development of land for construction and demolition debris processing, and green waste storage; (3) the construction of a 25,000 square foot (sf) material recovery building; (4) allow processing of recyclables from campus; (5) process green waste with food waste in an in-vessel system and windrow compost operation; (6) and allow improvements to the existing Great Meadow Bike Path.

Comments

The California Department of Resources Recycling and Recovery (CalRecycle), the solid waste Enforcement Agency for Santa Cruz County, is responsible for providing permitting and regulatory oversight of solid waste handling activities such as transfer/processing, composting, and construction, demolition and inert debris processing facilities. The permitting and regulatory requirements are contained in Title 14 and Title 27 of the California Code of Regulations (14 or 27 CCR).

SA-1-1

Material Recovery Facility (MRF)
Is the proposed MRF a "Recycling Center," or a Transfer/Processing Facility? Will the facility handle mixed solid waste and/or single stream or comingled recyclables? Will waste be stored onsite? Please provide the anticipated types of waste and the daily maximum amount of material to be processed, in tons.

For more specifics regarding the definitions refer to:

http://www.calrecycle.ca.gov/SWFacilities/Permitting/GeneralInfo/Definitions.htm

A "Recycling Center" shall not be subject to CalRecycle's Transfer/Processing Regulatory Requirements of 14 CCR, if it meets the requirements as listed in 14 CCR Section 17402.5, otherwise known as the Three-Part Test.

In summary, the Three-Part Test requires the following criteria be met to be considered a "Recycling Center":

- The facility shall only receive material that has been separated for reuse prior to receipt (14 CCR Section 17402.5(d)(1)).
- Residual amount of solid waste in the material is less than 10 percent of the amount of separated for reuse material received by weight (14 CCR Section 17402.5(d)(2)).
- The amount of putrescible wastes in the separated for reuse material is less than one (1) percent of the amount of separated for reuse material received by weight and the putrescible wastes in the separated for reuse material shall not cause a nuisance, as determined by the Enforcement Agency (14 CCR Section 17402.5(d)(3)).

For more specifics regarding the Three-Part Test refer to:

http://www.calrecycle.ca.gov/LEA/Advisories/58/default.htm.

Will the proposed project be designed and operated to meet the criteria of the Three-Part Test? It is recommended that operators of "recycling centers" that plan to operate in a manner that meets the Three-Part Test maintain adequate records documenting that they meet the criteria.

If the proposed facility does not meet the Three-Part, it will be considered a Transfer/Processing Facility. The volume of the material will determine the appropriate permitting tier.

For more specifics regarding permit tiers refer to:

http://www.calrecycle.ca.gov/LEA/Regs/Tiered/TierChart.htm

SA-1-2

In-Vessel Composter, Food Waste Tipping Area and Windrow Compost Operation
Please describe the in-vessel and food waste tipping area operation. What is the anticipated amount, in tons per day, of green waste and food waste that will be received and processed? What is the proposed capacity of the vessel? The project description states that the material will be ground, put in the vessel for a "few" days, then transferred to windrows for further composting. Will the windrow compost process occur within the building or outdoors? What will the facility do with the finished compost material? Will it be stored onsite? Will the finished material be sold or given away? Will the in-vessel compost system recover any gas as part of the process for fuel or energy purposes? At what temperature will the in-vessel composter operate? As stated on page 7 of the IS/MND, a permit to compost may be required by CalRecycle in order to operate.

For more specifics regarding compost regulations and standards refer to:

http://www.calrecycle.ca.gov/SWFacilities/Permitting/FacilityType/Compost/

SA-1-3

Construction & Demolition and Inert Debris (CDI)
Please describe the CDI operation. Will material be processed or ground on-site? Is material stored onsite? Please provide the amount, in tons, of CDI material to be received and handled. Depending on the operation, a permit may be required.

For more specifics regarding CDI regulations and standards refer to:

http://www.calrecycle.ca.gov/Laws/Regulations/Title14/ch3a595a.htm

SA-1-4

Hours of Operation
The IS/MND states hours of operation to be Monday through Friday from 7:00 a.m. to 2:00 p.m. Will this be the maximum days and hours of operation? CalRecycle suggests evaluating for axillary hours of operation and emergency hours. The maximum hours evaluated in this CEQA document, will be the maximum permitted hours for any CalRecycle permit.

Conclusions

SA-1-5

CalRecycle staff thanks the Lead Agency for the opportunity to review and comment on the Draft IS/MND and hopes that this comment letter will be useful to the Lead Agency in carrying out their responsibilities in the CEQA process.

CalRecycle staff requests copies of any subsequent environmental documents, copies of public notices and any Notices of Determination for this project. Refer to 14CCR Section 15094(c) that states:

> If the lead agency is a state agency, the lead agency shall file the notice of determination with the Office of Planning and Research [State Clearinghouse] within five working days after approval of the project by the lead agency.

SA-1-5, cont.

If the environmental document is adopted during a public hearing, CalRecycle staff requests 10 days advance notice of this hearing. If the document is adopted without a public hearing, CalRecycle staff requests 10 days advance notification of the date of the adoption and project approval by the decision-making body.

If you have any questions regarding these comments, please contact me at (916) 341-6772 or by e-mail at joy.isaacson@calrecycle.ca.gov.

Sincerely,

JML Isaacson

Joy Isaacson, Environmental Scientist
Permitting & Assistance Branch
Waste Permitting, Compliance & Mitigation Division
CalRecycle

cc: Daniel Anderson, CalRecycle
Virginia Rosales, CalRecycle

Response to Comment Letter SA-1

Response to Comment SA-1-1: The proposed material recovery facility (MRF), like the existing UCSC Refuse & Recycling Services, would be a Recycling Center. UCSC Refuse & Recycling Services is a Certified Community Service Program, issued by CalRecycle, certification number SP0417. All materials that are recovered at the current and proposed MRF are source separated at user locations for reuse/recycling. The MRF's function is to separate CRV materials from general non-CRV recyclable materials for maximum financial gain in support of the Campus' recycling program. The residual amount of solid waste in the MRF is less than ten percent, the amounts of putrescible wastes in the MRF is are less than one percent.

The facility will not handle mixed solid waste, and/or single stream or comingled recyclables. UCSC's recycle program dictates source separated recycling. The campus has four principal streams: refuse for landfill, compostable organics, container recycling and clean paper.

No waste is currently stored on site beyond that refuse temporarily held in frontloading trucks prior to delivery to landfill; that practice would continue at the new facility.

No waste would be processed or sorted on site. All campus waste is serviced and delivered to landfill as soon as the truck has been filled or within a 48 hour period. Refuse frontloading trucks never go longer than more than one night with refuse in the truck. All refuse materials collected in roll-off boxes are delivered to landfill immediately after pickup. Over 1,500 tons of refuse will be collected and delivered to landfill for FY2014-2015. To reach its Zero Waste 2020 goals, the Campus must reduce refuse delivery to 200 tons per year.

Only source-separated recyclable materials will be sorted at the MRF. For FY2014-2015, 576 tons of total material will be processed at the current location of the MRF, with 415 tons sourced from container recycling and 161 tons sourced at clean paper recycling. At full operational capacity, to meet the Campus' Zero Waste 2020 goals, a total of 650 tons of material could be processed at the proposed new MRF: 468 tons sourced from container recycling and 182 tons sourced from clean paper recycling.

As described above, the Project would be designed and operated to meet the criteria of the Three-Part test.

Response to Comment SA-1-2: Food waste would be deposited on a concrete pad from a roll-off box truck. After deposit, materials would immediately be ground and temporarily held in a three-sided CMU-constructed holding bin. By the end of daily operations, all food waste would be mixed with green waste, wood waste or other post-consumer organics as appropriate for proper compost production and deposited into the in-vessel composter for processing.

At full operations, to meet Zero Waste 2020 goals, 2.25 tons of green waste would be processed per day throughout the year; 8.66 tons of combined food waste and post-consumer organics would be processed per day during the nine months of the year when the Campus population is at its peak.

At present, the DTE Envirodrum 8-40 has been selected as fitting for projected operations, a unit with 60 yard operation capacity. Final selection of an in-vessel composter will not occur until a full review of proposals and units is undertaken, but the Project planning and design are based on a vessel with this capacity.

True windrow composting will be avoided if at all possible. After material has been processed in the in-vessel composter as specified by the manufacturer, raw compost materials will be stored in curing piles for at least a 90-day period in sheltered, three-sided CMU-constructed 30' X 30' X 16' bins. The Initial Study has been corrected at page 20 to clarify this.

Compost materials will only be stored on site as long as it takes for curing. Once cured, compost materials will either be spread on campus fields or advance to vermiculture boxes. The majority of the material will be spread on existing campus fields and meadows. The Campus anticipates that the vermiculture operation would consist of two to four 4-cubic-yard boxes. The resultant worm compost would either be used in existing farm operations at the neighboring Center for Agroecology & Sustainable Food Systems (CASFS) farm; excess may be sold in conjunction with CASFS' existing farm stand.

The in-vessel compost system would not recover any gas as part of the process for fuel or energy purposes. In-vessel compost system will maintain the temperature that is specified by the manufacturer, or if no adequate specification is made, according to best management practices for appropriate system operation.

Response to Comment SA-1-3: During times of increased construction on campus, UC Santa Cruz' refuse and recycling operations offers a competitive roll-off box service to contractors and our own (UC Santa Cruz) work management crews. Typically roll-off boxes are left as specified by the contractor and according to the conditions of the project contract. When the boxes are full, Campus staff truck the materials directly to regional, off-campus construction and demolition (C&D) management facilities. Usually, all materials are trucked to the City of Santa Cruz Landfill. However, for some projects, C&D materials are sorted on-site according to contractor specifications to meet the U.S. Green Building Council's Waste Diversion credits in support of Leadership in Energy & Environmental Design (LEED) certification standards. Once sorted, materials are delivered to an appropriate landfill operation, recycle vendor or other C&D MRF. Refuse-filled roll-off boxes are delivered to the landfill as soon as the C&D materials are sorted, usually within the day.

The amount of CDI materials vary with construction on campus. For FY2013-2014, only 174 tons of CDI materials were hauled from the campus and there were no major projects which required sorting at UCSC's current C&D management area.

Response to Comment SA-1-4: For all those CalRecycle permitted activities and/or operations, hours will be strictly limited to begin at 7 AM and end at 2 PM. Other operations not requiring permitted approval may occur beyond this time limitation. Such activities include the movement of mulch stockpiles, bin inventory management, and construction material access to base rock, fill or the like. Such extra-permitted activities could have longer hours of operation not to exceed the time from 6 AM to 4 PM.

Response to Comment SA-1-5: The Campus will provide the notifications as requested.

MBUAPCD
Monterey Bay Unified Air Pollution Control District
Serving Monterey, San Benito, and Santa Cruz Counties

Comment Letter RA-1

24580 Silver Cloud Court
Monterey, CA 93940
PHONE: (831) 647-9411 • FAX: (831) 647-8501

April 9, 2015

Ms. Alisa Klaus
Senior Environmental Planner
Office of Physical Planning & Construction
University of California Santa Cruz
1156 High Street, Barn G
Santa Cruz, CA 95064

Email: EIRcomment@ucsc.edu

Re: Recycling Yard and Great Meadow Bike Path Projects – Draft Initial Study/Mitigated Negative Declaration

Dear Ms. Klaus:

Thank you for providing the Monterey Bay Unified Air Pollution Control District (Air District) with the opportunity to comment on the above-referenced document. The Air District has reviewed the document and has the following comments:

RA-1-1
- The CalEEMOD output for both projects is incomplete: Phase I of the recycling yard project, the summer portion of Phase II of the recycling yard project, and the winter emissions for the bike path project have been left out of Appendix D. Please include the complete model output to support the emissions reported in the final MND.

RA-1-2
- The Air District expects that the dust control measures as outlined in Mitigation AIR-1 of the 2005 LRDP EIR will be implemented during both the construction and <u>operation</u> of the recycling yard in order to prevent potential violations of Air District Rule 400, Visible Emissions, and Rule 402, Nuisances. Measures may include watering the site and sweeping the road periodically to address track-out of dirt in order to limit fugitive dust emissions and potential dust impacts on people nearby.

RA-1-3
- Please verify that surfaces intended for vehicle use will be paved to limit operational fugitive dust emissions and potential dust impacts.

RA-1-4
- The project indicates that a diesel engine powered wood chipper will be installed on site. Please note that engines rated at greater than 50 horsepower are required to have an Air District Permit to Operate. Identify any other new stationary sources, such as a boiler or generator, which may be part of the proposed project. These types of stationary sources may also be required to have a Permit to Operate. The Air District's Engineering Division may be contacted at (831) 647-9411 if you have questions about permitting.

RA-1-5

- Please be aware that dust and diesel exhaust emissions from operating the wood chipper could cause a public nuisance. UCSC should be prepared to take measures to reduce these emissions if there are impacts on people nearby.

Please let me know if you have any questions. I can be reached at (831) 647-9418 ext. 227.

Best Regards,

Amy Clymo
Supervising Air Quality Planner

cc: David Frisbey/MBUAPCD

Response to Comment Letter RA-1

Response to Comment RA-1-1: The complete model output has been included in Appendix D of the final IS/MND.

Response to Comment RA-1-2: In Phase 1, the entire site would be surfaced with compacted base rock and gravel. In Phase 2, all surfaces intended for vehicle use would be paved. Therefore, the Campus does not anticipate that fugitive dust will be a significant issue at the site. However, there may be some areas where roll-off boxes are stored that are compacted earth where dust could be generated. Water would be available at the site for controlling dust as required to comply with applicable regulations.

Response to Comment RA-1-3: Please see response to Comment RA-1-2.

Response to Comment RA-1-4: It is likely that the composting operations would involve a grinder with a diesel engine rated at greater than 50 Hp. Therefore, the Campus anticipates that a permit would be required. No natural gas service to the site is proposed. Campus Standards do not permit the installation of diesel-fueled generators. Therefore, there is no potential for the Project to result in other stationary source emissions.

Response to Comment RA-1-5: Comment noted. Campus policy requires compliance with applicable environmental regulations. The Campus currently has permits to operate two diesel-fueled wood chippers, which prohibit emissions which constitute a public nuisance, and would comply with all such conditions of a future permit to operate the grinder at the proposed Recycling Yard site.

Comment Letter I-1

Alisa Klaus <aklaus@ucsc.edu>

[eircomment] Recycling Comment

1 message

James Blaine <jblaine@ucsc.edu> Thu, Mar 12, 2015 at 3:11 PM
To: eircomment@ucsc.edu

This comment is per the 3/9 Draft IS / MND notification.

Recycling Yard:
> Good Idea, Good location.
I-1-1 > Only concern - during Phase 1 - loose paper / blowing across the bike path (as a cyclist coming down hill, that's distracting at the point you need to focus on the bike path).

Bike Path:
I-1-1 > Good Idea, will make safer route.
> Down hill speed may increase slightly due to the easier corner / longer merge.
I-1-3 > Summer Farm Camps create an "informal" Crosswalk (usually with sidewalk chalk) crossing the bike path at the south end of the Village Parking lot as a short cut to the Farm, rather than walking the kids along the Farm road. In the proposed configure that "crosswalk" will occur just BEFORE the North & Southbound bike paths converge, perhaps a formal crosswalk should be put in w/ similar warning re. down hill bikes, as the Farm Road crossing. Or the informal crossing should be fenced off.

James Blaine
College Programs Coordinator
Porter College
(Bicycle Commuter)

Responses to Comment Letter I-1

Response to Comment I-1-1: In Phase 1, paper sorting will not be moved to the proposed Recycling Yard site. In Phase 2, paper sorting would be accommodated in a fully enclosed area of the proposed Material Recovery Center building. This would ensure that paper does not blow off the site.

Response to Comment I-1-2: The proposed radius of the curve in the downhill bike path in the approach to Village Road has been calculated to accommodate existing speeds more safely than under existing conditions. Bicycle riders may choose to take advantage of this to increase their speeds slightly; however the benefit of the increase in the sight distance as well as the improvement in safety for riders at existing speeds outweighs this potential disadvantage.

Response to Comment I-1-3: A crosswalk at the intersection of the Village Road and the bike path is not appropriate in the absence of a sidewalk. Details of the intersection signage and delineation have not been determined but will include a warning for pedestrians and vehicles of the approaching high-speed bicycles. The increased sight distances would also improve safety for pedestrians crossing the bike path. Following completion of the Bike Path Project, CASFS would re-evaluate the route taken by children’s groups to determine which is the safest. Completion of the Hay Barn Project in fall 2015, a new CASFS facility which is under construction at the southern end of the Farm Road, may also reduce the use of the Village Road by children’s groups accessing the farm.

Comment Letter I-2

Alisa Klaus <aklaus@ucsc.edu>

Re: [eircomment] Recycling Comment

1 message

James Blaine <jblaine@ucsc.edu> Thu, Apr 2, 2015 at 1:16 PM
To: eircomment@ucsc.edu

Hi EIR comment folk.

This is a follow up to my 3/12 response to 3/9 request for comments to a Recycling Yard and Bike Path reconfiguration.

I-2-1

Per this 3/27 Santa Cruz Sentinel article (http://www.santacruzsentinel.com/social-affairs/20150327/ucsc-plans-to-build-recycling-yard-to-solve-compost-problem) the plan includes a composting site IN ADDITION TO the recycling yard.

Is this article in error or was that aspect of the project just omitted from the comment request?

I-2-2

A compost facility in the same area isn't a bad idea BUT I am concerned about increased road way impact (traffic & surface), especially crossing the bike path. Also, unless the Compost facility will further increase the "industrial look"

I-2-3

of the area rather then the (currently) "agricultural" feel. A visual buffer (Trees) should be included to breakup that look.

James Blaine
College Programs Coordinator
Porter College

On Thu, Mar 12, 2015 at 3:11 PM, James Blaine <jblaine@ucsc.edu> wrote:

> This comment is per the 3/9 Draft IS / MND notification.
>
> Recycling Yard:
> > Good Idea, Good location.
> > Only concern - during Phase 1 - loose paper / blowing across the bike path (as a cyclist coming down hill, that's distracting at the point you need to focus on the bike path).
>
> Bike Path:
> > Good Idea, will make safer route.
> > Down hill speed may increase slightly due to the easier corner / longer merge.
> > Summer Farm Camps create an "informal" Crosswalk (usually with sidewalk chalk) crossing the bike path at the south end of the Village Parking lot as a short cut to the Farm, rather than walking the kids along the Farm road. In the proposed configure that "crosswalk" will occur just BEFORE the North & Southbound bike paths converge, perhaps a formal crosswalk should be put in w/ similar warning re. down hill bikes, as the Farm Road crossing. Or the informal crossing should be fenced off.
>
> James Blaine
> College Programs Coordinator
> Porter College
> (Bicycle Commuter)

Responses to Comment Letter I-2

Response to Comment I-2-1: As described in Section 3 of the Draft Initial Study, Phase 2 of the proposed Project would include a composting facility. This aspect of the Project was included in the Notice of Completion, the Notice of Availability of the Draft Initial Study/Mitigated Negative Declaration which was circulated to a list of individuals who have requested to receive Campus CEQA notifications, and in the legal advertisement placed in the *Santa Cruz Sentinel* on March 13, 2015.

Response to Comment I-2-2: As described in the Draft Initial Study, p. 20, the Project would result in result in 14 new daily round trips to the site by Campus trucks for recycling operations and organic feedstock delivery. The potential hazard to cyclists from the increase in the number of trucks crossing the bike path is analyzed in the Initial Study (p. 94). The analysis concludes that the impact would be less than significant with implementation of Recycling Yard Mitigation Measure TRA-1, which requires that the Campus complete construction of the Bike Path Project before Phase 2 of the Recycling Yard Project is completed.

Response to Comment I-2-3: The potential adverse effects of the proposed Recycling Yard Project on scenic resources and on the visual character of the site are analyzed in the Initial Study at pp. 37-38. As shown on Figure 3-5 in the Final Initial Study,[12] the proposed Project design includes shrubs on the southern and southeastern borders of the Project. The Initial Study identifies the effects of the Recycling Yard Project on views from Oakes College and the bike path and on scenic resources as a potentially significant impact, which would be reduced to a less-than-significant impact with implementation of Recycling Yard Mitigation Measure AES-1. This mitigation measure requires that tall shrubs and/or fast-growing trees such as *Cupresus*, *Myrica*, *Arbutus*, *Quercus*, or *Garrya* shall be planted along the northern and western perimeters to screen the facility.

[12] Figure 3-5 in the Draft IS/MND was a duplicate of Figure 3-3. This error has been corrected in the Final IS/MND.

UNIVERSITY OF CALIFORNIA, SANTA CRUZ

Comment Letter I-3

BERKELEY · DAVIS · IRVINE · LOS ANGELES · MERCED · RIVERSIDE · SAN DIEGO · SAN FRANCISCO SANTA BARBARA · SANTA CRUZ

GILDAS HAMEL
331 PLATEAU AVENUE
SANTA CRUZ, CALIFORNIA 95060

HOME: +1 (831) 423-1849
CELL: +1 (831) 325-5863
EMAIL: gweltaz@ucsc.edu

April 3, 2015

Office of Physical Planning & Construction
University of California Santa Cruz
1156 High Street
Santa Cruz, CA 95064
Attn: Alisa Klaus, Senior Environmental Planner

Dear Alisa Klaus,

I have read the *March 2015 Draft Initial Study/Mitigated Negative Declaration* prepared by the Office of Physical Planning & Construction. I also read other documents such as: the 2012 Task Report posted on the webpage of the UCSC Sustainability office; the short March 27, 2015, article in the local *Sentinel* paper; and a longer March 2014 article on the regional aspects of this question in the *Good Times.*

I-3-1

I have two comments on, or rather objections to, the project as presently formulated. The main one is about UCSC's rush to build a relatively small and expensive facility in order to meet a 2020 deadline of zero waste (meaning 95% diversion), when a more effective, cooperative, scaled up, and more sustainable solution would be a regional facility for the region from Santa Cruz to Watsonville.

I base this idea on the following facts as I understand them:

1. 40% of landfill waste, both at UCSC and in the region facilities, is organic waste (food debris + green waste). When it is dumped in a landfill, it becomes a major emitter of green house gases, especially methane. Everybody agrees that it is important to separate it, techniques and machines exist to do that efficiently and produce clean, rich compost rapidly, and there is a market for the end product.
2. The goal of zero waste by 2020 (= 95% diversion) given by UCSC and UCOP is the same as that of California's AB 32. This bill has the effect of urging the city of Santa Cruz, the county, Watsonville, and other local agencies, to look for a regional solution **together** because of scale and cost. One of the main reasons for the push is the considerable emission of methane in unsorted landfill.
3. The costs would be $5 million for the UCSC project. According to the 2012 *Good Times* article, the public works operations manager for the city of Santa Cruz, Mary Arman, speaks of a minimum project cost of $1.5 million (*GT* ref. below) and makes it clear that for treatment of organic debris, the cost would be high and scaling up is critical.

The region therefore is working on the same issue that UCSC faces. I assume a solution is being actively discussed regionally. It would therefore behoove UCSC to continue to explore the options in cooperation with local agencies and not rush a solo project through. I would prefer to see the regional options carefully discussed and factored in. It is possible that a future composting facility in the region would not suit UCSC's need because of its distance, and incurred costs, including transportation. Still, it makes sense to see UCSC become or remain involved in a full deliberation of the regional possibilities. I was not able to find any discussion of this avenue. For water, another essential good, UCSC could have developed its own water system, yet decided to rely on the city's facilities. Can't it continue to do the same for waste?

I-3-2 My second reaction concerns the location of the UCSC project. It is at the bottom of a beautiful meadow used by many cyclists and walkers. It is right north of the CASFS Farm, with its appropriate small buildings, and near the Arboretum. The pictures taken in the 3/2015 Draft Initial Study are taken from far and do not give a good sense of the impact this road, yard and building(s) would have on visitors and bicycle users. The project is judged to have little aesthetic impact (page 26 of the Draft Initial Study document). On the contrary, it seems to me that the project will have a major negative scenic impact.

I-3-3 Finally, the deadline given for public comments is confusing. Page 6 of the document says that comments must be made by 5:00PM on Friday, April 9, 2015. But April 9, 2015 is a Thursday. Do you mean Friday April 10?

Sincerely,

Gildas Hamel

Gildas Hamel
Senior Lecturer in History, emeritus

Responses to Comment Letter I-3

Response to Comment I-3-1: The local community effort to develop a composting facility includes Santa Cruz County and the cities of Scotts Valley, Capitola, Watsonville and Santa Cruz. UC Santa Cruz has been actively involved in the discussions on the county effort since they began, with representation by the Senior Superintendent of Grounds Services and the Sustainability Office Programs Manager. The Campus representatives were directly involved in developing the development of the Request for Proposals for the county project, as well as discussions regarding the exploration of potential sites in Santa Cruz and Watsonville.

One of the key differences between the needs of the County and cities within the county and those of the Campus is the composition of the compostable goods. The community project is focusing primarily on collection of pre-consumer kitchen food scraps, which have not been cooked or served. A large majority of the Campus' compostable material consists of post-consumer food scraps. This includes meat and dairy items, cooking oils, and compostable plates, cutlery and take-out clamshells. It is unlikely that the community solution will have the capacity to accommodate the university's needs anytime in the near future. However, we are still actively involved in the discussion, as it may be possible to consider partnering with them on processing a portion of the campus' pre-consumer material.

Response to Comment I-3-2: The visual simulations included in the Draft Initial Study are intended to illustrate the potential impacts on long-range scenic vistas from important vantage points identified in the 2005 LRDP EIR which offer unbroken and sweeping views towards Monterey Bay. The Initial Study (pp. 37-38) identifies these impacts as potentially significant, and identified Recycling Yard Mitigation Measure AES-1 to reduce these impacts to a less-than-significant level. The Draft Initial Study (p. 38) also identifies the effect of the proposed building, which is more massive than anticipated for the site in the LRDP EIR, as potentially significant impact to the meadow as a scenic resource. Recycling Yard Mitigation AES-1 would reduce both of these impacts to a less-than-significant level by ensuring that the building materials blend with the surrounding landscape and the profile of the building against the trees is reduced.

The Draft Initial Study (p. 39) also analyzes the potential impacts of the Project on the visual character and quality of the site, including the expansion of industrial features in an area with an agricultural character. This analysis relies on the analysis of visual character and quality in the 2005 LRDP EIR, which determined that new construction could affect the visual character of campus areas, if the new facilities are not designed to be visually or aesthetically compatible with their surroundings. The LRDP EIR determined that this impact would be less than significant with implementation of mitigation measures identified in the LRDP EIR. Two of these mitigation measures, LRDP EIR Mitigations AES-5A and AES-5C, which require, respectively, that the Design Advisory Board review consistency of projects with valued elements of the campus landscape, and that development preserve healthy and mature trees to the greatest extent feasible, are applicable to and incorporated into the proposed Recycling Yard Project. The Draft Initial Study determined that the impact of the Recycling Yard Project on the visual character and quality of the site would be less than significant with implementation of these mitigation measures, and that Recycling Yard Mitigation AES-1 would further reduce this less-than-significant impact by ensuring that the building materials blend with the surrounding landscape and the profile of the building against the trees is reduced.

Response to Comment I-3-3: Comment noted. All comment letters received through Friday April 10, with the University's responses, are included in the Final IS/MND. No comment letters have been received since that date.

REC'D APR 09 2015

Comment Letter I-4

April 8, 2015

Angela Elsey
Lecturer in French

Office of Physical Planning & Construction
University of California Santa Cruz
1156 High Street
Santa Cruz, CA 95064
Attn: Alisa Klaus, Senior Environmental Planner

Dear Alisa Klaus,

I have read the letter written by Gildas Hamel (quoted below) in response to the *March 2015 Draft Initial Study/Mitigated Negative Declaration* prepared by the Office of Physical Planning & Construction. I am in complete agreement with him and write to add my voice to his request for careful consideration of the option of greater collaboration with the city and county before proceeding with this important project.

As Mr. Hamel writes:

I-4-1

I also read other documents such as: the 2012 Task Report posted on the webpage of the UCSC Sustainability office; the short March 27, 2015, article in the local *Sentinel* paper; and a longer March 2014 article on the regional aspects of this question in the *Good Times*.

I have two comments on, or rather objections to, the project as presently formulated. The main one is about UCSC's rush to build a relatively small and expensive facility in order to meet a 2020 deadline of zero waste (meaning 95% diversion), when a more effective, cooperative, scaled up, and more sustainable solution would be a regional facility for the region from Santa Cruz to Watsonville.

I base this idea on the following facts as I understand them:

1. 40% of landfill waste, both at UCSC and in the region facilities, is organic waste (food debris + green waste). When it is dumped in a landfill, it becomes a major emitter of green house gases, especially methane. Everybody agrees that it is important to separate it, techniques and machines exist to do that efficiently and produce clean, rich compost rapidly, and there is a market for the end product.

2. The goal of zero waste by 2020 (= 95% diversion) given by UCSC and UCOP is the same as that of California's AB 32. This bill has the effect of urging the city of Santa Cruz, the county, Watsonville, and other local agencies, to look for a regional solution **together** because of scale and cost. One of the main reasons for the push is the considerable emission of methane in unsorted landfill.

3. The costs would be $5 million for the UCSC project. According to the 2012 *Good Times* article, the public works operations manager for the city of Santa Cruz, Mary Arman, speaks of a minimum project cost of $1.5 million (*GT* ref. below)

I-4-1, cont.

and makes it clear that for treatment of organic debris, the cost would be high and scaling up is critical.

The region therefore is working on the same issue that UCSC faces. I assume a solution is being actively discussed regionally. It would therefore behoove UCSC to continue to explore the options in cooperation with local agencies and not rush a solo project through. I would prefer to see the regional options carefully discussed and factored in. It is possible that a future composting facility in the region would not suit UCSC's need because of its distance, and incurred costs, including transportation. Still, it makes sense to see UCSC become or remain involved in a full deliberation of the regional possibilities. I was not able to find any discussion of this avenue. For water, another essential good, UCSC could have developed its own water system, yet decided to rely on the city's facilities. Can't it continue to do the same for waste?

I-4-2

My second reaction concerns the location of the UCSC project. It is at the bottom of a beautiful meadow used by many cyclists and walkers. It is right north of the CASFS Farm, with its appropriate small buildings, and near the Arboretum. The pictures taken in the 3/2015 Draft Initial Study are taken from far and do not give a good sense of the impact this road, yard and building(s) would have on visitors and bicycle users. The project is judged to have little aesthetic impact (page 26 of the Draft Initial Study document). On the contrary, it seems to me that the project will have a major negative scenic impact.

Sincerely,

Angela Elsey

Angela Elsey

Responses to Comment Letter I-4

Response to Comment I-4-1: Please see response to Comment I-3-1.

Response to Comment I-4-2: Please see response to Comment I-3-2.

Comment Letter I-5

Amy Hamel
331 Plateau Avenue
Santa Cruz, CA 95060

Office of Physical Planning & Construction
University of California Santa Cruz
1156 High Street
Santa Cruz, CA 95064
Attn: Alisa Klaus, Senior Environmental Planner

Dear Alisa Klaus,

I am sending you my own signed copy of the letter my husband Gildas Hamel sent you recently concerning the *March 2015 Draft Initial Study/Mitigated Negative Declaration* prepared by the Office of Physical Planning & Construction. Like him, I read other documents such as: the 2012 Task Report posted on the webpage of the UCSC Sustainability office; the March 27, 2015, article in the local *Sentinel* paper; and a March 2014 article on the regional aspects of this question in the *Good Times*. Let me simply repeat the rest of his letter below:

I-5-1

I have two comments on, or rather objections to, the project as presently formulated. The main one is about UCSC's rush to build a relatively small and expensive facility in order to meet a 2020 deadline of zero waste (meaning 95% diversion), when a more effective, cooperative, scaled up, and more sustainable solution would be a regional facility for the region from Santa Cruz to Watsonville.

I base this idea on the following facts as I understand them:

1. 40% of landfill waste, both at UCSC and in the region facilities, is organic waste (food debris + green waste). When it is dumped in a landfill, it becomes a major emitter of green house gases, especially methane. Everybody agrees that it is important to separate it, techniques and machines exist to do that efficiently and produce clean, rich compost rapidly, and there is a market for the end product.

2. The goal of zero waste by 2020 (= 95% diversion) given by UCSC and UCOP is the same as that of California's AB 32. This bill has the effect of urging the city of Santa Cruz, the county, Watsonville, and other local agencies, to look for a regional solution **together** because of scale and cost. One of the main reasons for the push is the considerable emission of methane in unsorted landfill.

3. The costs would be $5 million for the UCSC project. According to the 2012 *Good Times* article, the public works operations manager for the city of Santa Cruz, Mary Arman, speaks

I-5-1, cont.

of a minimum project cost of $1.5 million (*GT* ref. below) and makes it clear that for treatment of organic debris, the cost would be high and scaling up is critical.

The region therefore is working on the same issue that UCSC faces. I assume a solution is being actively discussed regionally. It would therefore behoove UCSC to continue to explore the options in cooperation with local agencies and not rush a solo project through. I would prefer to see the regional options carefully discussed and factored in. It is possible that a future composting facility in the region would not suit UCSC's need because of its distance, and incurred costs, including transportation. Still, it makes sense to see UCSC become or remain involved in a full deliberation of the regional possibilities. I was not able to find any discussion of this avenue. For water, another essential good, UCSC could have developed its own water system, yet decided to rely on the city's facilities. Can't it continue to do the same for waste?

I-5-2

My second reaction concerns the location of the UCSC project. It is at the bottom of a beautiful meadow used by many cyclists and walkers. It is right north of the CASFS Farm, with its appropriate small buildings, and near the Arboretum. The pictures taken in the 3/2015 Draft Initial Study are taken from far and do not give a good sense of the impact this road, yard and building(s) would have on visitors and bicycle users. The project is judged to have little aesthetic impact (page 26 of the Draft Initial Study document). On the contrary, it seems to me that the project will have a major negative scenic impact.

I-5-3

Finally, the deadline given for public comments is confusing. Page 6 of the document says that comments must be made by 5:00PM on Friday, April 9, 2015. I assume it is Thursday, April 9, 2015.

Sincerely,

Amy K Hamel

Amy K. Hamel

Responses to Comment Letter I-5

Response to Comment I-5-1: Please see response to Comment I-3-1.

Response to Comment I-5-2: Please see response to Comment I-3-2.

Response to Comment I-5-3: Please see response to Comment I-3-3.