Kresge College Renewal and Expansion Project

Addendum to the Environmental Impact Report for the Kresge College Renewal and Expansion Project SCH #2018042015

prepared by

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Acronyms and Abbreviations

AB	Assembly Bill
AMBAG	Association of Monterey Bay Area Governments
BMPs	Best Management Practices
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Standards Code
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CEC	California Energy Code
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
CO	Carbon monoxide
CO_2e	carbon dioxide equivalent
EIR	Environmental Impact Report
EOP	Emergency Operations Plan
GHG	Greenhouse Gas
GHWTP	Graham Hill Water Treatment Plant
GPD	Gallons Per Day
HVAC	Heating, Ventilation, and Air Conditioning
In/sec PPV	inches per second peak particle velocity
LEED	Leadership in Energy and Environmental Design
LOS	Level of Service
LRDP	Long Range Development Plan
MGD	Million Gallons Per Day
MGY	Million Gallons Per Year
MT	Metric tons
NO_x	Nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
PCR	Post-Construction Stormwater Management Requirements
$PM_{2.5}$	Particulate Matter less than 2.5 microns in diameter
PM_{10}	Particulate Matter less than 10 microns in diameter

PRC	Public Resources Code
ROG	Reactive Organic Gases
SCH	State Clearinghouse
SCWD	City of Santa Cruz Water Department
SO_2	Sulfur dioxide
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
UC	University of California
UC Santa Cruz	University of California, Santa Cruz
UWMP	Urban Water Management Plan
VdB	Vibration decibels
VMT	Vehicle Miles Traveled

1 Introduction

1.1 Project Overview

The Kresge College Renewal and Expansion Project (Original Project), approved by the University of California Board of Regents (Regents) in March 2019, involves a two-phase renewal and revitalization of Kresge College, the sixth college established at the University of California, Santa Cruz, in 1971. The Original Project involved demolition of nine existing buildings; construction of a new cluster of residential buildings, an academic building, and multi-purpose assembly space; and renovation, and reprogramming of most remaining existing buildings at Kresge College, as well as new outdoor amenities, circulation features, landscaping and utilities. In support of the Original Project approval, the Regents certified an Environmental Impact Report (EIR) (State Clearinghouse [SCH] #2018042015).

The Original Project was structured as two phases: the first phase included new construction of three residential halls (400 beds) and associated site work and began construction with an early site work package in fall 2019. The second phase of the approved project consists of renovating existing buildings for apartments, residential life programs, student support and college academic space, and related site work.

The first phase of the Original Project is currently underway and has included pouring foundations and the assembly of the primary structure for the new residential buildings. Mechanical, electrical and plumbing (MEP) systems have been installed and the wood cladding, windows, doors and glazing is being installed. For the new Kresge Academic Center, foundations have been poured and MEP systems have been installed. The primary structural framing has been installed, and the envelope is being installed. The pedestrian bridge work has begun.

Since the EIR was certified in March 2019, the scope of the Original Project has been modified to increase the residential capacity of Kresge College by up to 450 beds (Modified Project). Therefore, with the combined 565 beds analyzed in the Original Project, the Modified Project includes a total of up to 1,015 beds.

1.2 Background and Basis for Addendum

In accordance with the California Environmental Quality Act (CEQA) and Section 15164 of the CEQA Guidelines, an Addendum to a previously certified EIR may be prepared if some changes and additions are necessary, but none of the conditions described in CEQA Guidelines Section 15162 have occurred. Under CEQA Guidelines Section 15162, when an EIR has been certified for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:

1) Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the Negative Declaration was adopted, shows any of the following:
   a) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;
   b) Significant effects previously examined will be substantially more severe than shown in the previous EIR;
   c) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
   d) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

The Final EIR for the Original Project (SCH #2018042015) was certified in March 2019 by the University of California (UC). The certified Final EIR consists of responses to public and agency comments received on the Draft EIR and the text of the Draft EIR. The certified Final EIR is further supported by an accompanying Mitigation Monitoring and Reporting Program (MMRP). Information and technical analyses from the certified Final EIR are utilized or referenced throughout this Addendum. The certified Final EIR is available for review at the University of California, Santa Cruz (UC Santa Cruz) Physical Planning, Development, and Operations office located at 1156 High Street, Barn G, Santa Cruz, California 95064, and on the UC Santa Cruz website at https://ppc.ucsc.edu/planning/EnvDoc.html. In conjunction with certification of the Final EIR, the UC also adopted the MMRP and approved the Original Project.

The Final EIR for the Original Project tiered off of the 2005 Long-Range Development Plan EIR (2005 LRDP EIR) (SCH #2005012113) for the entire UC Santa Cruz campus certified in September 2006. The certified Final EIR for the 2005 Long-Range Development Plan is available for review at the University of California, Santa Cruz (UC Santa Cruz) Physical Planning, Development, and Operations office located at 1156 High Street, Barn G, Santa Cruz, California 95064 and on the UC Santa Cruz website at https://lrdp.ucsc.edu/final-eir.shtml. Since certification of the Final EIR by the UC Regents in 2019, the 2021 Long Range Development Plan (LRDP) was approved and the 2021 LRDP EIR was certified by the Regents in September 2021. The Modified Project is consistent with the 2005 LRDP and the 2021 LRDP.

This Addendum and attached supporting documents have been prepared to document that none of the conditions described in Public Resources Code Section 21166 or CEQA Guidelines Sections 15162 or 15164 calling for preparation of a subsequent or supplemental EIR have occurred.

2 Project Description

The Modified Project redesigns the Original Project analyzed in the certified Final EIR to provide additional critical student housing for the University. The Modified Project would take place on the same approximately eight-acre site as analyzed for the Original Project in the certified Final EIR.

Since the Final EIR was certified in March 2019, the Modified Project was proposed to expand the scope of the Original Project. The EIR Addendum evaluates an increase in the residential capacity of Kresge College. The Original Project replaced 365 existing beds with 565 beds, resulting in a net increase of 200 beds. This EIR Addendum evaluates an additional 450 beds, for a new total of up to 1,015 student beds for the Modified Project. The Modified Project would not generate new student population, because the proposed additional beds would accommodate existing demand.

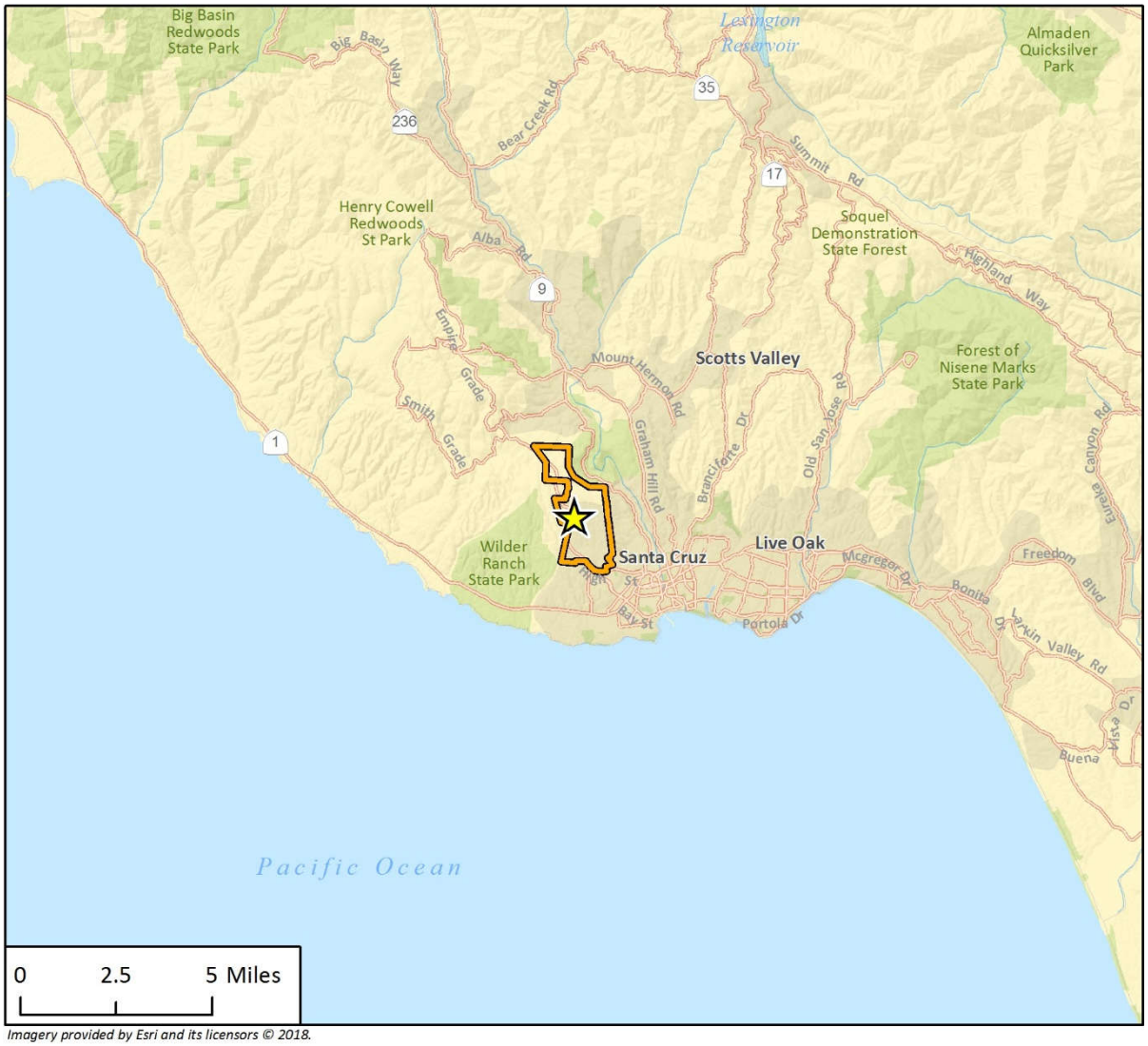
2.1 Project Site

The project site is the Kresge College campus, which is within the larger UC Santa Cruz campus. UC Santa Cruz is located on coastal terrace lands overlooking the Monterey Bay in northwestern Santa Cruz, California. The campus is approximately 75 miles south of San Francisco, 30 miles southeast of San Jose, and 30 miles north of Monterey. The approximately 2,020-acre main campus comprises sloping terrain covered with grasslands and redwood forest, and is interspersed with campus academic buildings, housing, and a road system. High Street, Bay Street, Western Drive, and Empire Grade provide the primary local vehicle routes to the campus.

Kresge College is located at the northwestern edge of the UC Santa Cruz campus area, just east of Empire Grade. Porter-Kresge Road is an internal campus road that passes along the western edge of Kresge College complex, linking it to Porter College to the south and to the rest of the campus and Empire Grade via Heller Drive. Figure 1 shows the regional location of the project. Figure 2 shows the project site location on the UC Santa Cruz campus. Figure 3 shows the project site boundary, which was the boundary for impacts analysis in the certified Final EIR.

Kresge College is bordered by the following land uses: campus natural reserve land to the north and west, natural space to the east, and colleges and student housing to the south (UC Santa Cruz 2021).

Figure 1 Regional Location



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Project Location

UCSC Campus Boundary

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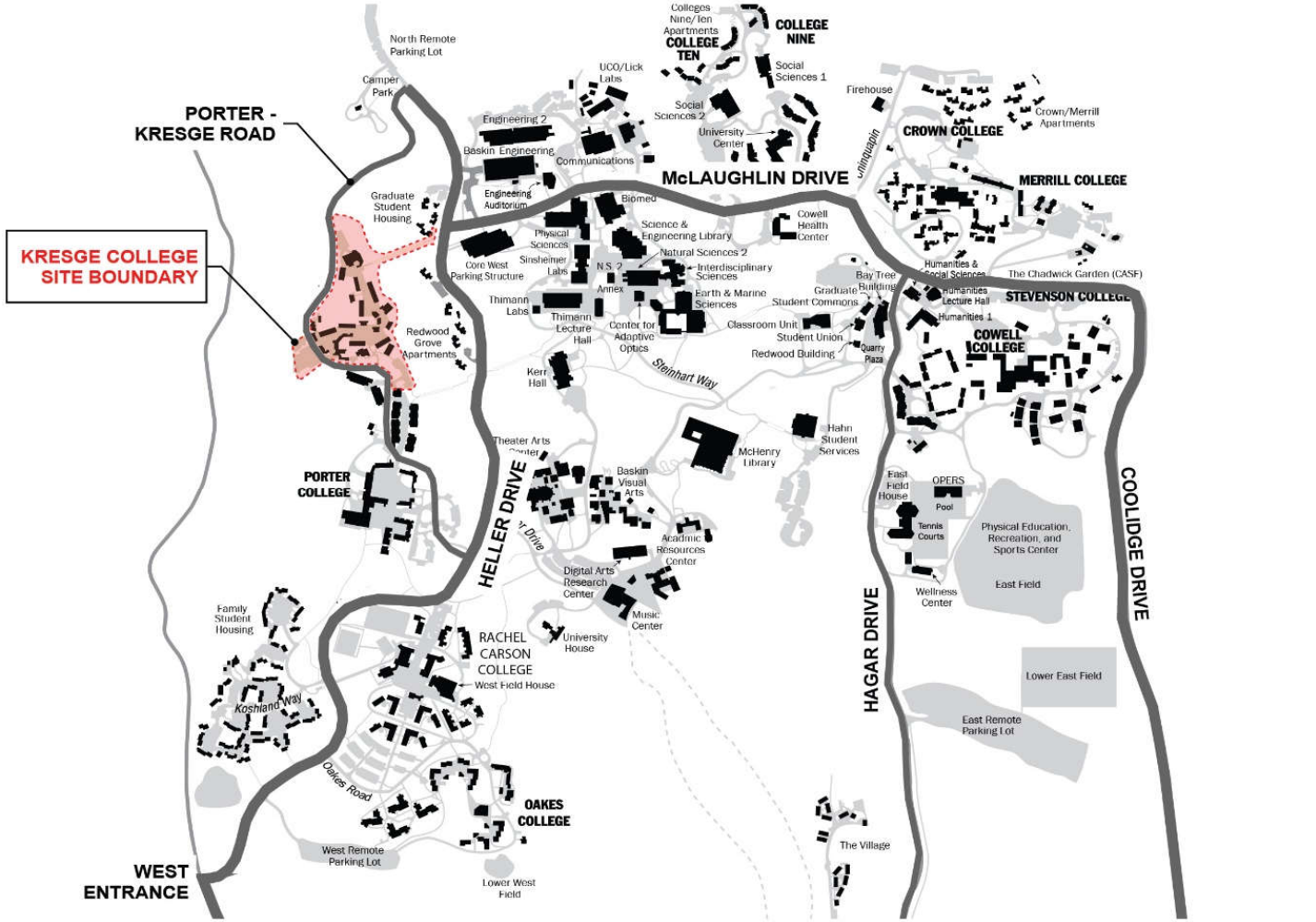
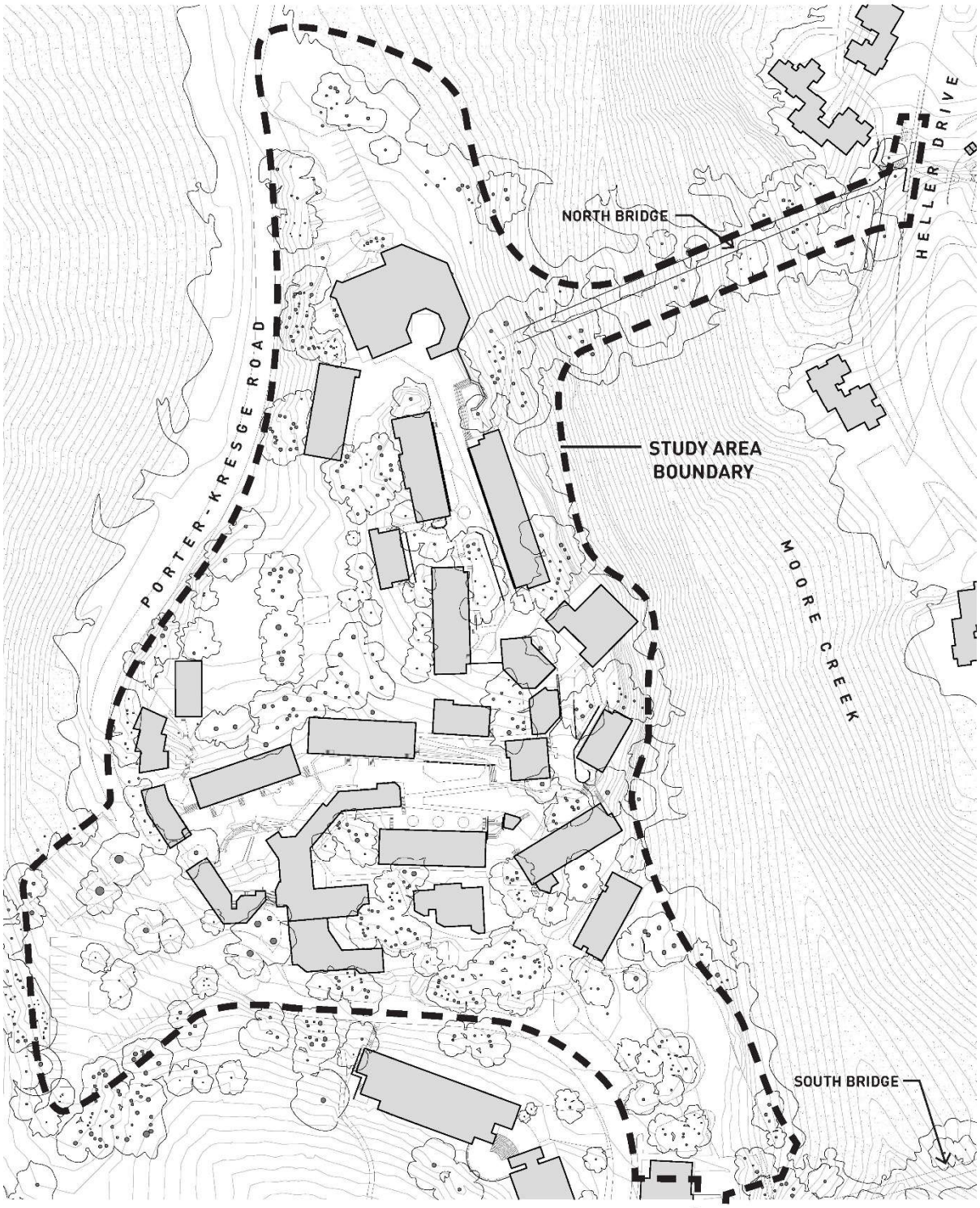
Fig 1 Regional Location

Figure 2 Project Site in Relation to the UC Santa Cruz Campus



Source: EHDD, 2022.

Figure 3 Project Site Boundaries



Source: Studio Gang, November 2018

2.2 Original Project

As outlined below and in Table 1 and Table 2, the Original Project is comprised of the following:

- Demolition of nine existing buildings including buildings G1, R5, R7, R8, R3, R11, the Triplets, the Mini Gym, and Annex A;
- Construction of five buildings including a cluster of three residential buildings with maximum heights of less than 65 feet, a 50-foot-tall academic building, and a 30-foot-tall multi-purpose assembly space with 250-person capacity;
- Renovation of buildings A1, A2, G2, R1, R2, R4, R6, R9, R10, and R12. New and renovated or reconstructed buildings will be reprogrammed to increase the functionality of the residential, academic, and student support spaces.
- Removal of 176 trees to accommodate new development, including some trees that are in poor condition
- Installation of stormwater management system components to accommodate an increase of 149, 870 SF of impervious surfaces.
- Improvements to and new construction of outdoor amenities, circulation features (including bicycle and pedestrian infrastructure), landscaping features, and utilities. Utilities will include installation of a purple-pipe system, which is a system that will allow the recycling and reuse of water at Kresge College for non-potable uses.

Figure 4 shows the Original Project site plan.

The Original Project results in 97,100 net-assignable square feet (ASF) of new construction consisting of modern housing and residential amenities. The Original Project replaces 365 existing beds with 565 beds, resulting in a net increase of 200 beds. The Original Project makes Kresge College fully accessible through the renovation of a 400-foot pedestrian bridge connecting Kresge College and the west side of the UC Santa Cruz campus to the academic core in addition to constructing accessible walkways and connections throughout the college.

2.3 Modified Project

As outlined below and in Table 1 and Table 2, the Modified Project is comprised of the following:

- Demolition of eight existing buildings including buildings G1, R5, R7, R3, R11, the Triplets, the Mini Gym, Annex A, and Annex B;
- Construction of six buildings including a cluster of three residential buildings with maximum heights of less than 65 feet, a 50-foot-tall academic building, a 30-foot-tall multi-purpose assembly space with 250-person capacity, and a new residential building (Kresge L building) of less than 72 feet

  The new Kresge L building would cluster with existing infill housing buildings, Buildings J and K, which were built in 2004. The new building would be six floors with housing program offices on the first floor and apartments above. This infill building would be located within the boundaries of the original project site but is physically separate from the Kresge College complex designed by Charles Moore and his firm Moore, Lyndon, Turnbull, Whitacre (MLTW).
- Renovation of buildings A1, A2, G2, R13, and R12. Fully and partially renovated building will be reprogrammed for residential, student support space, college academic and residential life spaces.

- Reconstruction of buildings R1, R2, R4, R6, R9 and R10 for residential space, including a new foundation and adding a third floor to take advantage of the high ceiling heights on the upper floor of these buildings while maintaining the same building footprint for efficiency and to retain the design intent of the original complex. These buildings were previously proposed to be renovated under the Original Project. Compared to the Original Project, the height of these buildings would also increase by approximately five feet on the back to accommodate the additional floor added to these buildings. However, the roof elevation on the front of these buildings would remain the same.
- Reconstruction of building R8 for residential space, including adding a third floor. This building was formerly slated for demolition under the Original Project.
- Reconstruction of buildings R9 and R10, which formerly were planned to be repurposed as student support space, would be reconstructed for residential space. Student support space would be reduced by 6,000 ASF in buildings R9 and R10, which were previously proposed to be fully renovated for student support under the Original Project. The additional student support space at Kresge is no longer necessary as centrally located space has become available for use by the identified services.
- New elevators in buildings where needed to ensure accessibility.
- Installation of stormwater management system components to accommodate an increase of 47,570 square feet of impervious surfaces for a total of 197,440 SF of impervious surfaces associated with the Modified Project.
- Temporarily retaining up to approximately 10,000 cubic yards of soil on an existing stock pile within the Main Residential Campus. This soil will be used as backfill and topsoil for the Modified Project and other campus projects as needed and will be covered under the Project SWPPP through the end of second phase.
- Construction access and circulation includes using internal circulation routes through the project site.
- Removal of up to approximately 138 additional trees compared to the Original Project for a total of 314 trees. The additional tree removal under the Modified Project is required for the reconstruction of buildings (e.g., demolition activities), installation of elevators, construction of the new Kresge L building in the south end of the project, as well as the removal of trees that are in poor condition.
- Improvements to and new construction of outdoor amenities, circulation features (including bicycle and pedestrian infrastructure), landscaping features, and utilities would remain the same as the Original Project under the Modified Project. Utilities will include installation of a purple-pipe system, which is a system that will allow the recycling and reuse of water at Kresge College for non-potable uses.

Figure 5 shows building modifications and newly constructed buildings. Selected sections of buildings that will accommodate an additional floor (e.g. R1, R2, R4, R6, R8, R9 and R10) are shown in Figure 6.

The Modified Project reflects changes to the square footage designated for student support, reconstruction of seven existing buildings, and construction of a new building in the south end of the project site. Overall, the Modified Project would expand residential square footage by approximately 51,300 ASF, reduce student support space by 6,700 ASF, and increase the square footage in the Town Hall for a total increase of approximately 45,400 ASF. The Modified Project increases the residential capacity of Kresge College by up to 450 beds for a total of up to 1,015 beds.

Table 1: Overall Summary of Project Changes to Assignable Square Feet, Beds, Tree Removal, and Impervious Surfaces

Program Component	**Original Project**	**Modified Project**	**Total ASF**
Housing and Residential Life			
New Res Halls, Cafe	46,000		**46,000**
Apartments and residential life space (A1, R1, R2, R4, R6, R8, R9, R10, A12, A13, Kresge L)	35,500	+ 55,200	**90,700**
Town Hall	2,800	+ 500	**3,300**
Student Programs (A2)	10,000	- 6,400	**3,600**
College Academic (G2)	2,800		**2,800**
Total (ASF)	**97,100**	**+ 49,300**	**146,400**
Bed Count[1]	**Original Project**	**Modified Project**	**Total Beds**
Total Bed Count	565	Up to 450	**Up to 1,015**
Existing Kresge Bed Count	*365*		*365*
Total Net New Project Bed Count	Up to 200	Up to 450	**Up to 650**
Tree Removals	**Original Project**	**Modified Project**	**Total Tree Removal**
Number of trees removed	176	138	**314**
Stormwater	**Original Project**	**Modified Project**	**Total**
Impervious Surfaces	**149,870 SF**	**47,570 SF**	**197,440 SF**

Notes:

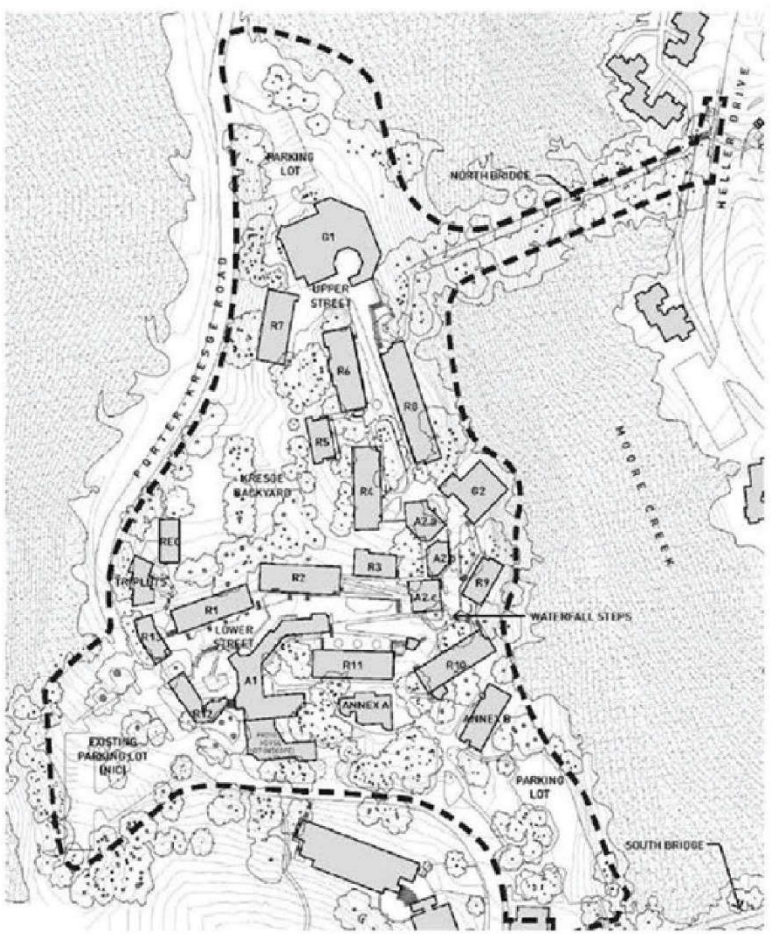
1. The certified Final EIR evaluated a net increase of up to 200 additional new beds and the EIR Addendum evaluates a net increase of up to 450 new beds.

Table 2 Summary of Changes to Existing Buildings and New Buildings

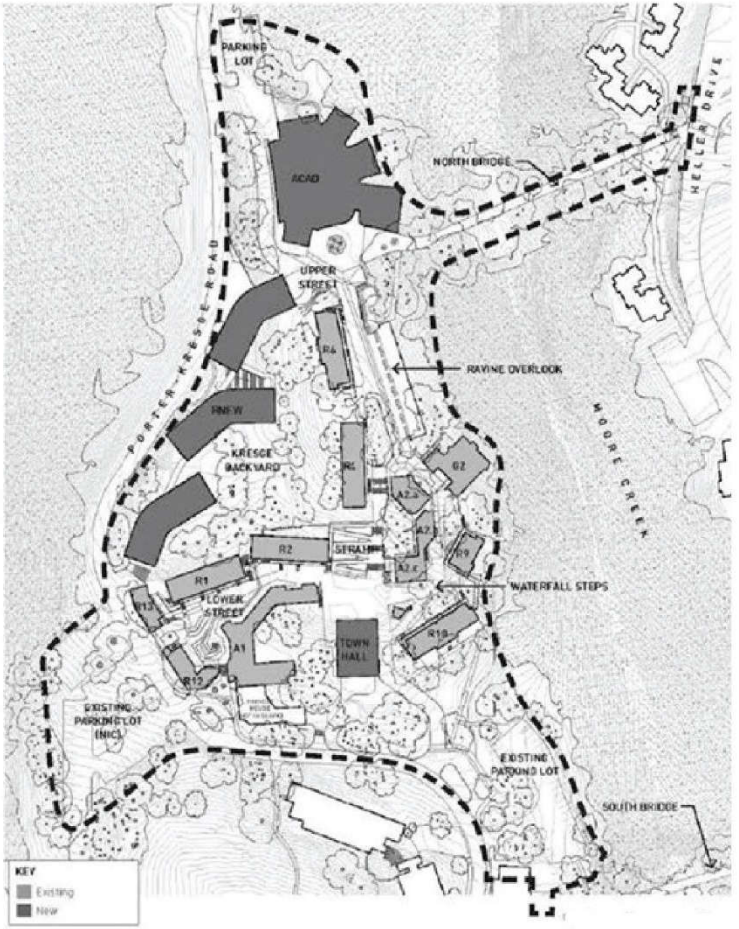
EXISTING BUILDINGS		
Existing Building	**Original Project**	**Modified Project**
Building A1	Partially renovated for residential space.	Fully renovated for residential space.
Building R1	Fully renovated for residential space.	Reconstructed with an additional floor for residential space.
Building R2	Fully renovated for residential space.	Reconstructed with an additional floor for residential space.
Building R3	Demolished	No Change
Building R4	Fully renovated for residential space.	Reconstructed with an additional floor for residential space.
Building R5	Demolished	No Change
Building R6	Fully renovated for residential space.	Reconstructed with an additional floor for residential space.
Building R7	Demolished	No Change
Building R8	Demolished	Reconstructed with an additional floor for residential space.
Building R9	Fully renovated for student support	Reconstructed for residential space. Square footage for student support use is no longer necessary as centrally located space has become available for use by the identified services.
Building R10	Fully renovated for student support	Reconstructed with an additional floor for residential space. Square footage is no longer necessary as centrally located space has become available for use by the identified services.
Building R11	Demolished	No Change
Building R12	Partially renovated for residential space.	No Change
Building R13	Partially renovated and converted to student co-op space	No Change
Annex A	Demolished	No Change
Annex B	Converted from graduate academic use to a maintenance workshop	Demolished
A2	Fully Renovation for student support.	No Change
G2	Fully Renovation for student support.	No Change

G1 (Town Hall)	Demolished	No Change
The Triplets	Demolished	No Change
Mini Gym (Recreation Room)	Demolished	No Change
NEW BUILDING CONSTRUCTION		
--	--	New residential infill building (Kresge L) for continuing students.
--	New Construction of Residential Cluster (RENEW)	No Change
--	New Construction of Town Hall	No Change
--	New Construction of Academic Building (ACAD)	No Change
Notes: 1. Reconstructed buildings = Entirely rebuilt including a new foundation within the existing building footprint. 2. Fully renovated buildings = Fully renovated buildings retain the foundations and primary wood structure where in good condition; interior layouts, MEP systems, and exterior envelope would be replaced. 3. Partially renovated buildings = The foundations, primary structure and exterior envelope remain as is, and only minor interior improvements would be made.		

Figure 4 Existing Site Plan and Approved Site Plan for the Original Project



EXISTING SITE PLAN



APPROVED SITE PLAN (ORIGINAL PROJECT)

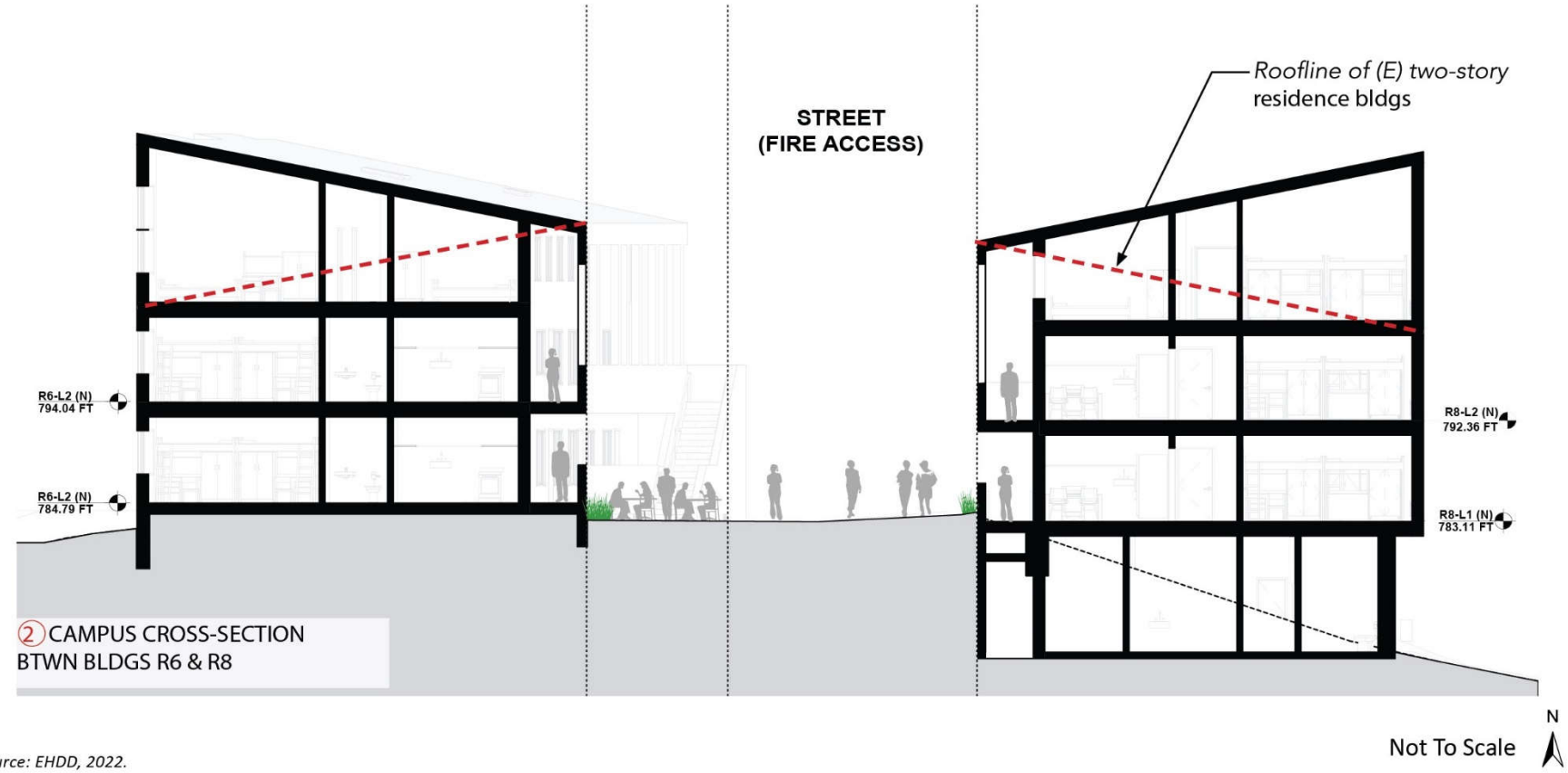
Source: EHDD, 2022.

Not To Scale N

Figure 5 Modified Project Site Plan Describing Building Modifications and Construction

Source: EHDD, 2022.

Figure 6 Site Sections of Reconstructed Buildings with Additional Floor



Source: EHDD, 2022.

3 Impact Analysis

A comparative analysis of the potential impacts associated with the proposed Modified Project and those of the approved Original Project analyzed in the certified Final EIR has been prepared using the CEQA checklist as a guide. This checklist is consistent with the format and environmental topics and questions of the checklist used in the Final EIR, but also includes updates to reflect the most current checklist provided in the 2021 *CEQA Guidelines* Appendix G. The checklist considers the full range of environmental issues subject to analysis under CEQA (in rows), and then poses a series of questions (in columns) aimed at identifying the degree to which the issue was analyzed in the Final EIR. The checklist also includes a column identifying whether the proposed Modified Project constitutes new information of substantial importance relative to each environmental issue. The questions posed in each column are described below.

What was the Impact and Where was the Impact Analyzed in the Certified Final EIR?

This column identifies the impact of the Original Project described in the certified Final EIR and provides a cross-reference to the portions of the certified Final EIR where information and analyses may be found relative to the environmental issue listed under each topic. The cross-references identified in this column correspond with page numbers and section numbers of the certified Final EIR.

Do Proposed Changes Require Major Revisions to the Certified Final EIR?

In accordance with *CEQA Guidelines* Section 15162(a)(1), this column indicates whether the proposed Modified Project would involve new significant environmental impacts or a substantial increase in the severity of previously identified significant impacts that, in turn, would require major revisions of the certified Final EIR.

Do New Circumstances Require Major Revisions to the Certified Final EIR?

In accordance with *CEQA Guidelines* Section 15162(a)(2), this column indicates whether changes to the circumstances under which the Modified Project is undertaken or implemented have occurred that would involve new significant environmental impacts or a substantial increase in the severity of previously identified significant impacts that, in turn, would require major revisions of the certified Final EIR.

Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?

In accordance with *CEQA Guidelines* Sections 15162(a)(3)(A) and 15162(a)(3)(B), this column indicates whether new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the certified Final EIR was certified, shows additional or substantially more severe significant impacts not discussed in the certified Final EIR. It should be noted that the Modified Project would remain subject to all previously adopted mitigation measures included in the certified Final EIR for the Original Project.

Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?

In accordance with *CEQA Guidelines* Sections 15162(a)(3)(C) and 15162(a)(3)(D), this column indicates whether new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the Final EIR was certified, shows that mitigation measures or alternatives in the certified Final EIR would now be feasible, or identifies new mitigation measures or alternatives not in the certified Final EIR that would reduce significant impacts, but which the applicant declines to adopt.

3.1 Aesthetics

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Have a substantial adverse effect on a scenic vista?	Less than Significant Impact, Page 4.1-17	No	No	No	No Mitigation was Necessary
b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	Less than Significant Impact, Pages 4.1-17 through 4.1-18	No	No	No	No Mitigation was Necessary
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	Significant and Unavoidable Impact, Pages 4.1-18 through 4.1-29	No	No	No	No Mitigation was Necessary
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	Less than Significant Impact, Page 4.1-29	No	No	No	Yes

a. Would the project have a substantial adverse effect on a scenic vista?

The Modified Project would be located within the same site footprint as the Original Project. As defined in the 2005 LRDP EIR, a scenic vista is an expansive view of a highly valued landscape observable from a publicly accessible vantage point. Due to the project site's location within the UC Santa Cruz campus surrounded by thick vegetation and steep topography, no scenic vistas are available to or from Kresge College. Scenic viewpoints identified in the City of Santa Cruz's General Plan 2030 EIR do not overlook the project site. Although the Modified Project would slightly

increase the height of buildings R1, R2, R4, R6, R8, R9, and R10 and would include construction of a new building (Kresge L) of less than 72 feet high in the south end of the project site because there are no scenic vistas available to or from Kresge College, impacts to scenic vistas would be less than significant, as they are for the Original Project. The Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact to scenic vistas.

b. Would the project substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

The Modified Project would be located on the same site as the Original Project. The project site is not located on or near a state scenic highway. The nearest eligible state scenic highway is State Route 9 located approximately 1.6 miles east of the project (California Department of Transportation [Caltrans] 2022). Due to the distance, intervening topography, and thick surrounding vegetation, the project site is not visible from State Route 9 and would not affect any scenic resources within view of a state scenic highway. Scenic resources identified on the UC Santa Cruz campus include Cowell Ranch Historic District buildings and structures, rock exposures in the main entrance area, and the meadows on the lower campus; none of these scenic resources are in or immediately adjacent to the project site. The Modified Project would therefore, like the Original Project, not obstruct scenic views or substantially damage any scenic resource, result in no new or more severe impacts to designated state scenic highways, or scenic resources beyond those identified in the previously certified Final EIR. The Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact to state scenic highways.

c. Would the project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The Modified Project would be located at the same site as the Original Project. As characterized in the certified Final EIR, the Kresge College complex has a high level of visual quality due to the harmonious relationship between the wooded landscape and distinct architectural style of the built environment. The Original Project would have altered the visual setting of the project site through tree removal, demolition of some existing buildings, construction of new buildings and outdoor amenities, and renovation of the exterior of buildings.

The site under the Modified Project would be largely built as described in the Original Project. As described in Table 2, buildings R1, R2, R4, R6, R8, R9 and R10 would be reconstructed and would have an increase in height of approximately five feet on the back side of the buildings due to the addition of a third floor. A new residential building, Kresge Building L, would be constructed in the south end of the project site near Kresge Buildings J and K but would be physically separate from the Kresge College complex designed by Charles Moore and his firm MLTW. Under the Modified Project, up to 138 additional trees located in proximity to the existing buildings may be removed to accommodate the project in order to reconstruct and construct the new buildings. However, the sense of the forest and the wooded landscape would continue to be retained under the Modified Project.

Building R8 was identified in the Final EIR as a contributing element to the eligible Kresge College Historic District. Building R8 is also visible from the main pedestrian street[1] of Kresge College. As building R8 would not be demolished and would be reconstructed under the Modified Project, impacts to existing visual character would be slightly reduced as the overall feeling of this portion of the district would not be as altered compared to the Original Project. However, because the eligible Kresge College Historic District is made up of 19 buildings and seven of the 19 buildings would continue to be demolished under the Modified Project (the Town Hall and buildings R3, R5, R7, R11, the Triplets, and the Mini Gym), impacts would be similar to those of the Original Project.

Reconstruction of buildings R1, R2, R4, R6, R8, R9, and R10 would correct demonstrated issues of water intrusion, signs of rot and decay, and severe plaster cracking, which would revitalize the college and improve the visual quality. Reconstruction of these buildings and adding an additional floor would create an overall building height increase of approximately five feet on the back side of the buildings. The Modified Project would also construct a new building, Kresge building L, in the south end of the project site that would cluster with existing infill housing, Kresge buildings J and K. However, even with an increase in the height of these buildings and construction of an infill building in the south end of the project site, the Modified Project would not substantially alter the visual quality of the site beyond that proposed under the Original Project.

Therefore, based on the changes described above, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of previously identified significant impact to visual character and quality.

d. Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

The project site is currently developed with existing security lighting, exterior lighting, and windows contributing to light and glare. The Original Project would introduce new light sources on pathways, at outdoor plazas, outside buildings, and through windows which would contribute to nighttime ambient light on the site. Increased lighting would be concentrated in areas within or near new development on the project site. The amount of light associated with the Modified Project would increase slightly compared to the Original Project due to the reconstruction of seven buildings with the addition of a third floor, as well as the construction of a new building in the south end of the project site. However, adherence to the UC Santa Cruz Campus Standards Handbook and implementation of mitigation measures in the 2005 LRDP EIR Mitigation Measures AES-6B, AES-6C, and AES-6E would reduce impacts related to light pollution and glare. Therefore, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact to light and glare.

[1] The pedestrian street at Kresge College is the primary circulation route where pedestrians, not vehicles, are considered users of the "street."

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3.2 Agriculture and Forestry Resources

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	No Impact, Page 4.18-1	No	No	No	No Mitigation Was Necessary
b. Conflict with existing zoning for agricultural use or a Williamson Act contract?	No Impact, Page 4.18-1	No	No	No	No Mitigation Was Necessary
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	No Impact, Pages 4.2-8 through 4.2-10	No	No	No	No Mitigation Was Necessary
d. Result in the loss of forest land or conversion of forest land to non-forest use?	Less Than Significant Impact, Pages 4.2-8 through 4.2-10	No	No	No	No Mitigation Was Necessary
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	No Impact and Less Than Significant Impact, Page 4.18-1 and Pages	No	No	No	No Mitigation Was Necessary

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
conversion of forest land to non-forest use?	4.2-8 through 4.2-10				

a. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

b. Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?

e. Would the project 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?

As described on page 4.18-1 in the certified Final EIR, impacts to criterion a, b, and part of e were found not to be significant. The project site is located on the UC Santa Cruz campus on land designated for Colleges and Student Housing uses, as described on page 4.11-2 of the certified Final EIR. The project site does not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance and there are no active Williamson Act contracts associated with the project site (California Department of Conservation 2020). As the Modified Project would be conducted on the same site as the Original Project, it would have no new or more severe impact to farmland compared to the Original Project analyzed in the certified Final EIR. The nearest agricultural uses in the project vicinity include commercial agricultural lands located 0.6 mile to the west of the project site, across Empire Grade; the UC Santa Cruz Farm located approximately 1 mile southeast of the project site adjacent to the campus arboretum; and the Kresge Garden, a community garden for students, located outside the boundary of the project site. The project is located on the UC Santa Cruz campus and would continue the existing land use of Colleges and Student Housing; therefore, it would not result in the conversion of farmland or land zoned for agricultural use to a non-agricultural use, same as the Original Project. The Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact to Important Farmland and Williamson Act contracts.

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

e. Would the project 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?

The Modified Project would be constructed on the same project site as the Original Project. As described in the certified Final EIR on page 4.2-8, the project site has approximately 55 percent tree canopy coverage. The project site is considered forestland as defined by Public Resource Code Section 12220(g) which defines forestland as supporting 10 percent native tree-cover of any species. The Original Project evaluated the removal of 176 trees which would reduce the tree canopy to approximately 20 percent total coverage. However, this would not reduce the canopy to less than 10 percent total coverage, maintaining the site's classification as forestland. Since the removal of trees within the project site met the definition of commercial species under the Z'berg-Nejedly Forest Practice Act of 1973 (Public Resources Code 4526), a Timber Conversion Permit (TCP) and Timber Harvest Plan (THP) were prepared for the project and subsequently approved by the California Department of Forestry (CalFire) in 2019.

The Modified Project is anticipated to result in the removal of up to 138 additional trees on the project site compared to the Original Project for a total of 314 trees. The additional tree removal under the Modified Project is required for the reconstruction of buildings (e.g. demolition activities), installation of elevators, construction of the new Kresge L building in the south end of the project, as well as the removal of trees that are in poor condition. However, the removal of the additional trees associated with the Modified Project would not reduce the tree canopy to less than 10 percent total coverage and the additional tree removal would follow the requirements of the Z'berg-Nejedly Forest Practice Act of 1973 and the approved TCP and THP. Similar to the Original Project, the Modified Project would comply with existing regulations and would not conflict with lands zoned for timber harvesting or production nor would it cause rezoning of such land. The Modified Project would have a less than significant impact to forest and timberland, consistent with the impacts of the Original Project. Therefore, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact to forest and timberland.

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3.3 Air Quality

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Conflict with or obstruct implementation of the applicable air quality plan?	Less than Significant Impact, Page 4.3-11	No	No	No	No Mitigation Was Necessary
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?	Less than Significant Impact, Pages 4.3-11 through 4.3-14	No	No	No	No Mitigation Was Necessary
c. Expose sensitive receptors to substantial pollutant concentrations?	Less than Significant Impact, Pages 4.18-1 through 4.18-2	No	No	No	No Mitigation Was Necessary
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	Less than Significant Impact, Page 4.3-16	No	No	No	No Mitigation Was Necessary

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

The 2012-2015 Air Quality Management Plan (AQMP) is the current applicable air quality plan for the Monterey Bay region, including the UC Santa Cruz campus. The AQMP was adopted by the Monterey Bay Air Resources District (MBARD) on March 15, 2017 and is the AQMP that was used for this impact analysis in this Addendum and in the previously certified Final EIR for the Original Project. AQMPs are developed for regions that do not meet ambient air quality standards. According to the MBARD 2008 *Guidelines for Implementing CEQA*, a project can be considered consistent with the AQMP if that project is accommodated in the AQMP.

As discussed under Section 4.3.5 of the certified Final EIR, the current AQMP for MBARD is based on population and housing forecasts prepared by Association of Monterey Bay Area Governments (AMBAG). The LRDP population forecasts and emissions from campus growth were accounted for by AMBAG and MBARD in accordance with Mitigation Measures AIR-4A and AIR-4B in the 2005 EIR and thus mitigated in regional air quality planning efforts.

Given the substantial demand for on-campus housing, the increase in student beds under the Modified Project would accommodate existing demand at UC Santa Cruz. Because the Modified Project would accommodate existing demand, similar to the Original Project, the Modified Project would not induce population growth in the project vicinity, including within the City of Santa Cruz and County of Santa Cruz, beyond AMBAG projections. Therefore, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to conflicts with the AQMP.

b. Would the project 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?

Like the Original Project, the Modified Project would result in emissions of air pollutants, including criteria pollutants. Construction and operational impacts of the Modified Project related to criteria pollutant emissions are addressed separately below.

Construction

Construction of the Modified Project would result in the temporary generation of air pollutants from operation of heavy construction equipment and generation of fugitive dust in the construction area. The construction emissions of the Modified Project were estimated using the California Emissions Estimator Model (CalEEMod), version 2020.4.0. CalEEMod uses project-specific information, including the project's land uses, square footages for different uses (e.g., warehouse with office space, parking lot, etc.), and location, to model a project's emissions. Construction emissions modeled include emissions generated by construction equipment used on-site and emissions generated by vehicle trips associated with construction, such as worker and vendor trips. CalEEMod estimates construction emissions by multiplying the amount of time equipment is in operation by emission factors. Construction was analyzed based on defaults contained in CalEEMod, and from project-specific inputs for the project. It is assumed that all construction equipment used would be diesel-powered. The CalEEMod default inputs, project-specific inputs, and model results are provided as Appendix A to this addendum.

Maximum daily emission levels associated with construction of the Modified Project, are shown in Table 3. The maximum daily emissions for each calendar year that construction is scheduled is presented in Table 3, including 2019 through 2021. Past years, such as 2019, are presented because construction activities had already occurred, either entirely or partially, as part of the Original Project, and therefore are effectively part of the Modified Project. MBARD has only adopted a quantitative threshold for PM_{10} emissions during construction; however, emissions from the other criteria pollutants are also provided for informational purposes.

Table 3 Estimated Construction Daily Maximum Air Pollutant Emissions (lbs/day)

Year	Estimated Maximum Emissions (lbs/day)					
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_X
2019 Maximum Daily Emissions	8.0	82.5	45.7	12.8	8.5	0.1
2020 Maximum Daily Emissions	16.0	136.3	109.8	19.6	12.7	0.2
2021 Maximum Daily Emissions	5.4	30.0	45.4	2.7	1.6	0.1
2022 Maximum Daily Emissions	10.8	39.5	64.3	3.4	2.1	0.1
2023 Maximum Daily Emissions	11.3	91.1	94.3	16.9	10.2	0.2
2024 Maximum Daily Emissions	6.2	23.9	44.3	12.5	1.3	0.1
2025 Maximum Daily Emissions	6.8	31.0	57.4	2.9	1.6	0.1
Maximum Daily Construction Emissions	**16.0**	**136.3**	**109.8**	**19.6**	**12.7**	**0.2**
MBARD Thresholds (average daily emissions)	-	-	-	82	-	-
Threshold Exceeded?	**-**	**-**	**-**	**No**	**-**	**-**
*Maximum Daily Construction Emissions of the Original Project**	*9.8*	*36.0*	*45.2*	*3.2*	*2.1*	*0.1*
Did Original Project Exceed Threshold?	*-*	*-*	*-*	*No*	*-*	*-*

Winter emissions results are shown for construction emissions, because winter emissions are either equal to or greater than summer emissions for all criteria pollutants. The mitigated results account for compliance with the 2005 LRDP Mitigation Measure AIR-1. Emission quantities are rounded to the tenth decimal place. Overall construction emissions for the Modified Project are shown in the CalEEMod Worksheets provided in Appendix A.

Source: CalEEMod Version 2020.4.0

* Original Project Maximum Daily Construction Emissions are derived from Table 4.3-4 on page 4.3-12 of the certified Final EIR

As shown in Table 3, maximum daily emissions from construction of the Modified Project exceed the Original Project's estimated maximum daily construction emissions. The Modified Project emissions mostly vary from the Original Project because a newer version of CalEEMod was released since certification of the Final EIR and was used to estimate emissions of the Modified Project. The Original Project was modeled using CalEEMod Version 2016.3.2, and the Modified Project was modeled using the newest and current version of CalEEMod, which is CalEEMod Version 2020.4.0.

Some of the main differences between the two versions of CalEEMod that can contribute to different results in emissions estimates include:

- Update from 2016 Title 24 standards to 2019 Title 24 standards pertaining to energy use and efficiency
- Update of emissions factors in EMFAC2014 to EMFAC2017 pertaining to emissions from vehicles;
- Revised utility intensity factors based on updates provided by utility providers in California

Additionally, the maximum daily emissions of the project primarily result during the 2020 construction year, which has already passed. Nonetheless, as shown in Table 3, emissions from construction of the Modified Project would not exceed applicable MBARD thresholds, and impacts would be less than significant. As described in the certified Final EIR and shown in Table 3, the construction emissions of the Original Project did not exceed the MBARD thresholds and was a less than significant impact. Therefore, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact from construction emissions.

Operation

Emissions associated with operation of the Modified Project would be long term and include vehicle trips to and from the site (mobile sources), electricity use (energy sources), and landscape maintenance equipment, consumer products, and architectural coating associated with on-site development (area sources). Mobile source emissions that would be generated by vehicle trips to and from the project site were estimated using the trip rate provided in the Trip Generation Analysis (Fehr & Peers 2022a) (see Appendix B).

As shown in Table 4, maximum daily emissions from operation of the Modified Project would exceed the Original Project's estimated maximum daily operational emissions. The operational emissions of the Modified Project vary from the Original Project because a newer version of CalEEMod was released since certification of the Final EIR, which incorporated updates to the Title 24 standards pertaining to energy use and efficiency; updates of emissions factors in vehicle; and revised utility intensity factors.

Additionally, the Modified Project includes operation of building R8, which would have been demolished under the Original Project. Additionally, the Modified Project emissions also include operation of new Kresge Building L, which was not a part of the Original Project or included in the daily operational emissions of the Original Project. Although the maximum daily emissions from operation of the Modified Project would exceed the emissions of the Original Project, they would not exceed MBARD thresholds and would not substantially contribute to the emission of criteria pollutants, as shown in Table 4. Similarly, as described in the certified Final EIR, emissions from operation of the Original Project would also not exceed applicable thresholds and was found to be less than significant. Because there would be no substantial contribution of criteria pollutant emissions resulting from the Modified Project, there would also be no corresponding substantial contribution of adverse health effects. Therefore, operation of the Modified Project would not result in any new significant impact or substantial increase in the severity of previously identified significant impacts related to operational emissions.

Table 4 Estimated Operational Daily Maximum Air Pollutant Emissions (lbs/day)

Sources	Estimated Maximum Daily Emissions (lbs/day)					
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_X
Area	5.6	1.0	83.7	0.5	0.5	<0.1
Energy*	-	-	-	-	-	-
Mobile	4.0	4.8	38.7	6.8	1.9	0.1
Total Emissions	**9.6**	**5.8**	**122.4**	**7.3**	**24**	**0.1**
MBARD Thresholds (average daily emissions)	137	137	550	150	82	-
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**-**
*Maximum Daily Operational Emissions of the Original Project***	*5.9*	*7.6*	*55.0*	*5.5*	*1.3*	*0.1*
Did Original Project Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*-*

See Table 2.2, Overall Operational (Unmitigated), in CalEEMod worksheets provided in Appendix A. Emission data is pulled from "mitigated" results, which account for compliance with regulations (including the California Green Building Code) and project design features. Emissions presented are the highest of the winter and summer modeled emissions. Emission quantities are rounded to the tenth decimal place.

Source: CalEEMod Version 2020.4.0

* Kresge College uses electricity, which does not contribute to criterial pollutant emissions. Natural gas for the project would be for emergency generators and potentially for cooking at the café. These uses are minor and would not contribute to overall air quality energy emissions, and these uses were also part of the Original Project.

** Original Project Maximum Daily Operational Emissions are derived from Table 4.3-6 on page 4.3-14 of the certified Final EIR

In summary, construction and operation of the Modified Project would result in an increase in the emissions of air pollutants. However, as shown in Table 3 and Table 4, emissions would not exceed the applicable significance thresholds established by MBARD for criteria pollutants. Therefore, impacts of the Modified Project would be less than significant. Additionally, as described in the certified Final EIR, impacts of the Original Project would also be less than significant. Because impacts would be less than significant, the Modified Project would not result in any new significant impacts or substantial increase in the severity of previously identified significant impact related to criteria pollutants.

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

As described on page 4.15-17 of the certified Final EIR, the Original Project would result in a lower trip generation than what was analyzed in the 2005 LRDP EIR due to an increase in the number of students living on campus, which subsequently reduces campus commute trips. The Modified Project would provide up to 450 additional beds that would increase the number of students that could reside on campus instead of at off-campus locations compared to the Original Project. This would reduce the number of potential trips made by students commuting to campus from off-campus residences. Therefore, there would be less concentrated toxic air contaminant emissions, such as vehicle exhaust, within proximity to sensitive receptors, such as residences or schools or hospitals in the region. Therefore, the Modified Project would not result in any new significant

impacts or a substantial increase in the severity of a previously identified significant impact related to exposure of sensitive receptors to air pollution.

d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The Modified Project would result in no new or more severe impacts related to odors beyond those identified in the previously certified Final EIR for the Original Project. The Modified Project would, like the Original Project, involve temporary construction odors such as exhaust followed by a continuation of the existing uses at Kresge College while also increasing the capacity for students to reside on-site at Kresge College. There would be no new sources of odors adversely affecting a substantial number of people. Construction of the Modified Project would generate odorous emissions such as diesel exhaust similar to the Original Project. Therefore, the Modified Project would not result in any new significant impacts or new or a substantial increase in the severity of previously identified significant impact from other emissions such as those leading to odors.

3.4 Biological Resources

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Less than Significant Impact with Mitigation Incorporated, Pages 4.4-14 through 4.4-17	No	No	No	Yes
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Less than Significant Impact, Page 4.4-17	No	No	No	No Mitigation Was Necessary
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	No Impact, Page 4.18-2	No	No	No	No Mitigation Was Necessary
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?	Less than Significant Impact, Page 4.4-18	No	No	No	No Mitigation Was Necessary

		What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	No Impact, Pages 4.18-2 through 4.18-3	No	No	No	No Mitigation Was Necessary
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?	No Impact, Page 4.18-2	No	No	No	No Mitigation Was Necessary

a. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

The Modified Project would be built and operated on the same project site as the Original Project. Special-status species and species of special concern with the potential to occur within the project site include Anderson's manzanita, white-flowered rein orchids, Santa Cruz black salamander, California giant salamander, California red-legged frog, Cooper's hawk, white-tailed kite, pallid bat, Townsend's big-eared bat, and San Francisco dusky-footed woodrat (United States Fish and Wildlife Service [USFWS] 2022). Construction and operation activities under the Modified Project would be similar to those under the Original Project, with a similar construction footprint and similar activities, which would not substantially increase the intensity or duration of construction activities. Additionally, the Modified Project would comply with mitigation measures included in the 2005 LRDP EIR such as Mitigation Measure BIO-6 to avoid the spread of invasive weeds; Mitigation Measure BIO-9 to avoid construction-related impacts to California red-legged frogs; Mitigation Measure BIO-11 to conduct a nesting bird survey prior to construction activities; Mitigation Measure BIO-13A and 13B to conduct seasonally timed surveys to reduce impacts to roosting bats in north campus; Mitigation Measure BIO-14 to conduct a preconstruction survey of suitable habitat to reduce impacts to San Francisco dusky-footed woodrats; and Final EIR Mitigation Measures BIO-1(a) and BIO-1(b), which require a worker environmental awareness program training and additional mitigation related to California Red-legged frogs. With implementation of relevant mitigation measures the Modified Project would not result in any new significant impacts or a substantial increase in the severity of previously identified significant impact to special-status species.

b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

The Modified Project would be built on the same project site as the Original Project. The two sensitive habitats identified in the Original Project EIR on the project site were the Kresge Tributary and redwood forest. Redwood forest is considered a sensitive natural community by CDFW while Kresge tributary is not (CDFW 2021), consistent with CDFW designations when the certified Final EIR was prepared. Redwood forest community only occurs at the far north end of the project site. The Modified Project would not take place in areas identified as sensitive natural communities or riparian habitat. Therefore, the Modified Project would therefore not result in new significant impacts or substantial increase in the severity of a previously identified significant impact to riparian habitat or sensitive natural communities.

c. Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

As discussed in Section 4.18, *Effects Found Not to be Significant*, of the certified Final EIR, no federally protected wetlands occur on the project site and therefore no impacts to riparian habitats, other sensitive natural communities, or wetlands would occur. According to the USFWS, no new wetlands have been mapped on the project site since the preparation of the certified Final EIR (USFWS 2021). Therefore, the Modified Project would not result in new significant impacts or a substantial increase in the severity of a previously identified significant impact on wetlands.

D. Would the project 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?

As discussed on page 4.4-18 of the certified Final EIR, no wildlife movement corridors or habitat linkages occur in the proposed footprint of disturbance; therefore, no alteration of wildlife movement at the project site would occur. Given the existing levels of disturbance from human activity in the project area associated with the operation of the UC Santa Cruz campus and the temporary nature of construction, wildlife movement in the area was concluded to already be heavily impacted and the project site was determined to be a marginal corridor for movement. The certified Final EIR determined that construction and operation of the Original Project would have a less than significant impact on movement of common wildlife species in the area. As the Modified Project would be built on the same project site as the Original Project and result in a similar level and timing of construction activities; no wildlife movement corridors or habitat linkages would be disturbed with implementation of the Modified Project. The Modified Project would therefore not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact to wildlife movement, migratory wildlife corridors, or native wildlife nursery sites.

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Although UC Santa Cruz is not subject to local policies or ordinances established by the City or County of Santa Cruz, including those that protect biological resources, the 2005 LRDP includes planning principals to protect biological resources by establishing land use patterns intended to respect the natural environment and preserve open space, respect major landscape and vegetation

features, and maintain wildlife habitat continuity, while promoting sustainable development and enriching the academic experience for all students. The Modified Project would be consistent with those planning principles by renovating existing buildings in a previously developed area to accommodate higher student densities. Impacts to adjacent lands designated as Campus Natural Reserve land uses would be avoided.

The Modified Project would occur on the same site as the Original Project. As described in the certified Final EIR, the project site is not located in any habitat preservation plan or conservation plan areas. The closest habitat conservation plan to the project site is the UC Santa Cruz Ranch View Terrace Habitat Conservation Plan which is located on the lower campus approximately 1.1 miles southeast of the project site. Therefore, neither the Original Project nor the Modified Project would conflict with local policies or ordinances protecting biological resources, or conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. The Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact to biological ordinances or conflicts with an adopted Habitat Conservation Plan.

3.5 Cultural Resources

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	Significant and Unavoidable Impact with Mitigation Measures Incorporated, Pages 4.6-15 through 4.6-23	No	No	No	No
b. Cause a substantial adverse change in the significance of an archaeological pursuant to §15064.5?	Less than Significant Impact, Page 4.6-24	No	No	No	Yes
c. Disturb any human remains, including those interred outside of formal cemeteries?	Less than Significant Impact, Page 4.6-25	No	No	No	Yes

a. Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Architecture + History, LLC prepared a technical memorandum, which included a revised impact analysis for the Modified Project. The Technical Report is included as Appendix C to this Addendum and has been incorporated herein.

As described on page 4.6-15 of the certified Final EIR, the Kresge College was found to be eligible as a historic district (District) under the California Register for its significant associations within the broad themes of education and design and is consequently considered a historical resource as defined be CEQA. In the area of design, Charles Moore with MLTW and landscape architect Dan Kiley created a campus setting that is unparalleled in its fulfillment of Postmodern ideals. The physical characteristics include aspects of the larger site and its design, such as building placement and orientation, site circulation, plantings, water features, landscape materials, and viewsheds. They also include individual buildings and structures critical to the District's ability to convey its significance, identified as "contributors," where those that do not convey significance are identified as "non-contributors."

As described on page 4.6-17 of the certified Final EIR, except for the Graduate Annex A and Graduate Annex B buildings, the buildings at Kresge College are contributing elements to the

District. As discussed in the certified Final EIR, the Original Project would have significant and unavoidable impacts to the historic resources because it involves demolition of existing buildings and renovations to existing buildings at Kresge College. As discussed on page 4.6-22 of the certified Final EIR, the primary reason the Original Project would have significant impacts on the historic resource is due to demolition of nine contributing buildings at Kresge College.

The Modified Project would be located on the same project site as the Original Project and would result in both a slight increase and reduced impacts to the District's individual buildings and character-defining features. For instance, given the current condition of the buildings and the desire for additional housing, buildings R1, R2, R4, R6, R8, R9 and R10 would not be renovated as proposed under the Original Project, but reconstructed with a new foundation and an additional story that would increase the overall height by five feet on the back side of the buildings, which could result in a slight increase in impacts. However, the front façade of these buildings would remain the height of the other contributing buildings that would not be altered by the project.

Building R8, which was proposed for demolition, would be reconstructed as part of the Modified Project. Reconstruction of this important contributing building would be an improvement and reduce impacts because the overall feeling of this portion of the District would not be as altered as compared to the Original Project. Reconstructing building R8 also reduces the number of buildings being demolished, from nine in the Original Project to eight in the Modified Project.

The Modified Project includes a set of detailed design guidelines (See Appendix C) that would provide a visual tool to guide the project related to building renovation and reconstruction to ensure that the buildings retain the design intent of the original complex. The renovated buildings would retain many historic materials and features and would be upgraded where necessary. The design guidelines illustrate how upgrades to the facades and façade finishes, fenestration, color, and interior layout and finishes would be accomplished under the Modified Project.

With regard to reconstruction of buildings, the intent of the design guidelines is to give an overview of how to maintain the overall character of the historic district and key character-defining features of the buildings, while reconstructing a number of the original buildings. This would be reflected in the footprint, materials, architectural details and vocabulary of the buildings but would allow for an additional floor, accessible entry via elevators, and reconfiguration of interior spaces to accommodate current student housing needs and code requirements.

The design guidelines also address keeping key circulation and site elements intact, including site circulation, landscaping, and gathering areas also defined as character-defining features of the District. With the Modified Project, the need for internal circulation through the project for construction access may affect the "Waterfall steps," creating a slightly increased impact if they are to be reconstructed rather than maintained as is.

The certified Final EIR identified several Mitigating Design Features that would remain relevant and applicable to the Modified Project including: selective demolition; the retention and restoration of key legacy features such as the Piazzetta; locating a portion of the new construction at the historic district edge to minimize disturbance to and avoid significance changes to the existing buildings; and a continuation of the architectural character of Kresge College through the use of salvaged and compatible materials, and common design features.

While the Modified Project would continue to result in significant unavoidable impacts to the Kresge College Historic District, an identified historical resource under CEQA, several important design components would remain in the Modified Project as positive actions including: restoration of the Piazzetta; retention of building footprints, landscape features, and the progression of the street

uphill toward building R8; the reconstruction of building R8 in its original footprint; and that the project would follow a detailed set of design guidelines for the reconstructed and newly constructed buildings. These design components would help mitigate some of the identified impacts. While some buildings would be reconstructed rather than renovated, it is the design intent that many of those buildings would be visually almost identical to their original configuration, especially their "street-facing" façades.

Therefore, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact on historic resources. However, mitigation measures CUL-1(a) and CUL-1(b) on page 4.6-23 of the certified Final EIR would be applicable to the Modified Project. Similarly, mitigation measures CULT-2D and CULT-2F in the 2005 LRDP EIR would also apply.

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

As discussed in the certified Final EIR on page 4.6-24, no archaeological resources were identified at the project site during the site surveys conducted at the time of preparation of the Final EIR. However, construction-related ground disturbing activities could uncover unanticipated subsurface archaeological resources. Compliance with 2005 LRDP EIR mitigation measures including Mitigation Measures CULT-1B, CULT-1G, and CULT-4B which focus on contractor archaeological site and artifact training, stop work procedures to follow in the event an archaeological resource is discovered during construction, and the opportunity for a local Native American community representative to monitor any excavation within the boundaries of a known Native American archaeological site.

While the Modified Project would require ground disturbance for some structural features not include in the Original Project, the additional ground disturbance would be minimal and would occur within the project footprint previously evaluated in the certified Final EIR for the Original Project. The Modified Project would also adhere to 2005 LRDP EIR Mitigation Measures CULT-1B, CULT-1G, and CULT-4B. Therefore, the Modified Project would not result in any new significant impact or a substantial increase in the severity of a previously identified significant impact to archaeological resources.

c. Would the project disturb any human remains, including those interred outside of formal cemeteries?

As discussed in the certified Final EIR on page 4.6-25, the project site is not known to contain human remains. The project site was previously disturbed during the construction of the existing Kresge College campus. However, the discovery of human remains is a possibility during ground disturbing activities. If human remains are found, the California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the county coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the Santa Cruz County Coroner must be notified immediately. If the human remains are determined to be prehistoric, the coroner is required to notify the Native American Heritage Commission, a representative of which would determine and notify a most likely descendant. The most likely descendant must complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

With adherence to existing regulations and 2005 LRDP EIR Mitigation CULT-4C and CULT-4D which establish stop work procedures in the event of a human bone or burial discovery, similar to the

Original Project, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact to human remains.

3.6 Energy

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	Less than Significant Impact, Pages 4.7-15 through 4.7-18	No	No	No	No Mitigation Was Necessary
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	Less than Significant Impact, Pages 4.7-18 through 4.7-19	No	No	No	No Mitigation Was Necessary

a. Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

b. Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

As discussed in the certified Final EIR on pages 4.7-15 and 4.7-16, during project construction, energy would be consumed in the form of petroleum-based fuels to power off-road construction vehicles and equipment on the project site; construction worker travel to and from the project site, as well as delivery truck trips; and to operate generators to provide temporary power for lighting and electronic equipment. The Original Project would involve typical construction activities including site preparation, paving, building construction, building renovation, and landscaping. All construction would be typical for the region and building types. The Original Project would include sustainable design features in compliance with the California Green Building Standards Code (CALGreen). Compliance with CALGreen would result in the use of sustainable materials and recycled content that would reduce energy consumption during project construction. In addition, compliance with the California Air Resources Board (CARB) airborne toxic control measure and 2005 LRDP EIR Mitigation Measure AIR-6 would establish idling restrictions and the use of electrical and properly maintained equipment as well as result in less fuel combustion and energy consumption. The Modified Project may consume additional energy during construction because it includes additional construction not envisioned as part of the Original Project, such as construction of new Kresge Building L and reconstruction of building R8, which would have been demolished and not

reconstructed under the Original Project. Additionally, the Modified Project also includes reconstruction instead of renovation of several buildings, which would include an additional floor.

As described in Section 3.3, *Air Quality*, of this Addendum, CalEEMod version 2020.4.0 was used to estimate the emissions that would result from project construction and operation. CalEEMod also provides an estimate of energy consumption during operation. Based on CalEEMod completed for the Modified Project, project operation would consume approximately 4 million kilowatt hours per year. The CalEEMod default inputs, project-specific inputs, and model results are provided as Appendix A to this Addendum.

Operation of the Modified Project would be required to comply with the UC Sustainable Practices Policy and comply with 2005 LRDP EIR Mitigation Measure UTIL-5, which would add new campus buildings to the Campus Energy Management System and to control the buildings temperature based on time of use of building and outside temperature. The University also requires all UC projects to achieve a minimum rating of Silver under the United States Green Building Council's Leadership in Energy and Environmental Design (LEED) Building Design and Construction (BD+C) v4.0 Green Building Rating Systems. This would ensure that the Modified Project would not result in wasteful, inefficient, or unnecessary consumption of energy resources during operation.

With regard to operational transportation energy demands, the Original Project would not substantially increase fuel consumption because it would not increase vehicle trips. The Modified Project would also not substantially increase fuel consumption as it would provide even more on-campus housing for students, which would reduce vehicle trips and the energy that would have otherwise been consumed in association with those trips (see Section 3.17, *Transportation*). Therefore, the Modified Project would not substantially increase energy consumption from motor vehicle transportation because the Modified Project reduces vehicle trips and associated energy consumption.

The Modified Project would therefore not result in any new significant impacts or a substantial increase in the severity of previously identified significant impact related to wasteful, inefficient, or unnecessary consumption of energy resources; or the potential to conflict with state or local plans for renewable energy or energy efficiency. Because the Modified Project would not increase the severity of previously identified significant impact related to wasteful, inefficient, or unnecessary consumption of energy resources, cumulative impacts of the project would also not increase in severity.

3.7 Geology and Soils

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:					
1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	No Impact, Pages 4.18-2 through 4.18-3	No	No	No	No Mitigation Was Necessary
2. Strong seismic ground shaking?	Less than Significant Impact, Page 4.8-8	No	No	No	No Mitigation Was Necessary
3. Seismic-related ground failure, including liquefaction?	Less than Significant Impact, Page 4.8-9	No	No	No	No Mitigation Was Necessary
4. Landslides?	Less than Significant Impact, Page 4.8-9	No	No	No	Yes
b. Result in substantial soil erosion or the loss of topsoil?	Less than Significant Impact, Page 4.8-10	No	No	No	No Mitigation Was Necessary
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	Less than Significant Impact, Pages 4.8-	No	No	No	Yes

		What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
	off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	10 through 4.8-11				
d.	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	Less than Significant Impact, Page 4.8-11	No	No	No	Yes
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?	No Impact, Pages 4.18-2 through 4.18-3	No	No	No	No Mitigation Was Necessary
f.	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Less than Significant Impact, Pages 4.6-24 through 4.6-25	No	No	No	Yes

a. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

a.1 Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

Potential risks and susceptibility to earthquake fault ruptures are site-specific and related to proximity of the project site to faults. As discussed in Section 4.18, *Effects Found Not to be Significant*, of the certified Final EIR for the Original Project, the project site is not located in an Alquist-Priolo Fault Zone and there are no known active, potentially active, or inactive faults that transect the project site. Therefore, there would be no potential for surface rupture on the project site and no impact would occur. Since the Modified Project would be located on the same site as the Original Project, potential risks associated to earthquake rupture faults would be the same and therefore the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to fault rupture.

a.2 Strong seismic ground shaking?

Potential risks due to strong seismic ground shaking are site-specific and based on the seismic activity of the region. As discussed in the certified Final EIR on page 4.8-8, the project site is in a seismically active region and may be exposed to strong seismic ground shaking during the life of the project. Similar to the Original Project, construction of the Modified Project would conform with current state seismic and geotechnical codes, including the UC Seismic Safety Policy and CBC seismic regulations. Compliance with these requirements would reduce the effects of strong seismic ground shaking on project residents and visitors for both the Original Project and the Modified Project. The UC Santa Cruz Emergency Operations Plan (EOP) establishes policies and procedures in case of emergency and includes specific protocol to follow in the event of seismic and geologic hazards. Adherence to these policies would improve safety and reduce risk of loss, injury, and death resulting from a large seismic event. Therefore, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact from strong seismic ground shaking.

a.3 Seismic-related ground failure, including liquefaction?

Potential risks associated with seismic-related ground failure and landslides are site-specific. As discussed on page 4.8-9 in the certified Final EIR, the project site does not contain shallow groundwater, cohesionless sands, or other conditions that indicate high liquefaction hazard. As such, liquefaction hazards at the project site are minimal and project impacts related to liquefaction would be less than significant. As the Modified Project would take place on the same site as the Original Project, the Modified Project would not result in increased substantial adverse effects related to seismic-related ground failure compared to the Original Project. Therefore, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to seismic ground failure, including liquefaction.

a.4 Landslides?

Potential risks associated with landslides are site-specific. As discussed in the certified Final EIR on page 4.8-9, there are no identified landslide hazards in or adjacent to the project site. However, the project site is located between the Cave Gulch and Moore Creek drainages which have the potential to be landslide hazards in the event of ground disturbance within the steeply sloping banks of these drainages. Portions of the project site adjacent to steep slopes flanking the east, west, and south sides of the Kresge College complex could be subject to landslide hazards. Compliance with 2005 LRDP EIR Mitigation Measure GEO-1 requiring a detailed geotechnical study for areas that would support buildings or foundations where existing information is not accurate and incorporation of the geotechnical investigations' recommendations into project design would reduce project impacts with regards to landslides.

Therefore, the potential for landslides at the project site described in the certified Final EIR for the Original Project could also potentially affect the Modified Project. Landslide potential is greatest in the eastern area of the project site near an existing drainage. Project components under the Modified Project in this area of the project site include buildings R8 and R9, which would be reconstructed, as well as the proposed Kresge L building. Except for the proposed Kresge Building L, buildings R8 and R9 are existing and included in the Original Project, but would require new foundations when they are reconstructed under the Modified Project. Compliance with Mitigation Measure GEO-1, including during construction on Kresge Building L and the reconstruction of buildings R8 and R9, would ensure that the project design would reduce the Modified Project's impacts related to landslides. Therefore, the Modified Project would not result in any new

significant impact or a substantial increase in the severity of a previously identified significant impact related to landslides.

b. Would the project result in substantial soil erosion or the loss of topsoil?

As discussed in the certified Final EIR on page 4.8-10, soil types on the project site have moderate to high erosion potential. Construction-related activities could lead to increased erosion. Similar to the Original Project, the Modified Project would be required to comply with applicable state and UC Santa Cruz policies aimed at reducing soil erosion, both during and after construction. The Modified Project would be required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for the Original Project, as well as UC Santa Cruz's Post-Construction Stormwater Management Requirements, which was developed to comply with the Central Coast Regional Water Quality Control Board Resolution No. R3-2013-0032. Since the Modified Project would take place on the same project site and would be subject to the same campus standards and NPDES requirements, Modified Project would not result in any new significant impact or a substantial increase in the severity of a previously identified significant impact related to soil erosion or the loss of topsoil.

c. Would the project 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?

Geologic units and soil types are site-specific. The Modified Project would be on the same site as the Original Project. The Modified Project does not designate any new areas for construction or development that were not contemplated and analyzed for development in the certified Final EIR. As discussed in the certified Final EIR for the Original Project, karst conditions were noted to the east and southwest of the project site.[2] Similar to the Original Project, the Modified Project would be required to comply with 2005 LRDP EIR Mitigation Measure GEO-1 which requires a detailed design-level geotechnical study and implementation of recommended measures to reduce potential karst-related hazards. The preliminary geologic study for the Original Project included preliminary recommendations to reduce karst hazards including structural mat foundations and/or a compaction grouting program. These recommendations, modified as needed pursuant to a design-level geotechnical study for the Modified Project, would ensure that the Modified Project would not exacerbate existing karst-related hazards. Impacts would be less than significant with Mitigation Measure GEO-1, which is required under the 2005 LRDP EIR, and the Modified Project would not result in any new significant impact or a substantial increase in the severity of a previously identified significant impact related to unstable or expansive soils.

d. Would the project 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?

The Modified Project would be on the same project site as the Original Project. As described in the certified Final EIR, the project site contains moderate to high expansive soils which poses problems for shallow foundations, shallow slab-on-grade floor systems, and hardscape or pavement improvements. Proposed improvements associated with the Modified Project would not exacerbate existing expansive soil conditions, similar to the Original Project. Implementation of 2005 LRDP EIR Mitigation Measure GEO-1 which requires a design-level analysis and compliance with recommendations contained therein would reduce the Modified Project's impacts to less than

[2] Karst refers to a type of landscape where bedrock has been dissolved, creating sinkholes, sinking streams, caves, springs, and other characteristic features (National Park Service 2021).

significant levels similar to that under the Original Project. Therefore, the potential for the Modified Project to result in unstable soils or to be damaged from expansive soils would be the same as the Original Project analyzed in the certified Final EIR, and the Modified Project would not result in any new significant impact or a substantial increase in the severity of a previously identified significant impact related to unstable or expansive soils.

e. Would the project 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?

As discussed on page certified 4.18-2 of the certified Final EIR, wastewater produced on the UC Santa Cruz campus is conveyed via the campus sewer system to the City of Santa Cruz's publicly owned treatment works (UC Santa Cruz 2019a). Both the Original Project and the Modified Project would be served by the City of Santa Cruz's municipal wastewater service. Septic tank installation or alternative wastewater disposal systems would not be a part of the Original Project or Modified Project. No geological impact due to use of such systems would occur. The Modified Project would not result in any new significant impact or a substantial increase in the severity of a previously identified significant impact related to the use of septic tanks or alternative wastewater systems.

f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Records searches conducted to support the certified Final EIR for the Original Project resulted in no previously recorded fossil localities being found within the project area or vicinity. The geologic units that underlie the project site have low paleontological sensitivity. The project site is already disturbed. Due to the low paleontological sensitivity and the existing disturbed nature of the project site, the potential for encountering paleontological resources during construction of the Modified Project would be low, similar to the Original Project. Compliance with 2005 LRDP EIR Mitigation Measures CULT-5C and CULT-5D would reduce impacts to less than significant levels if Modified Project construction activities uncover unanticipated resources. These mitigation measures require that work stop in the event of a paleontological resource discovery and that impacts to the find be reduced through design and construction modifications to the extent feasible. With implementation of these mitigation measures, impacts would be less than significant, and the Modified Project would not result in any new significant impact or a substantial increase in the severity of a previously identified significant impact related to unique paleontological resources.

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3.8 Greenhouse Gas Emissions

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less than Significant Impact, Pages 41 through 42	No	No	No	No Mitigation Was Necessary
b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less than Significant Impact. Page 42	No	No	No	No Mitigation Was Necessary

The greenhouse gas (GHG) emissions associated with Modified Project construction and operation were estimated using CalEEMod, version 2020.4.0, and model results are included in Appendix A. Consistent with the approach taken in Section 4.5 of the certified Final EIR, construction emissions are amortized over the Modified Project's life span (defined as 30 years) and added to operational emissions. As explained in Section 4.5.3 of the certified Final EIR, due to the absence of MBARD GHG thresholds and with MBARD guidance, UC Santa Cruz has elected to first use the adjusted San Luis Obispo Air Pollution Control District (SLOAPCD) bright-line threshold of 920 metric tons of carbon dioxide equivalent (MT CO_2e) per year to evaluate the significance of the Modified Project's GHG emissions. The bright-line threshold is adjusted to meet 2030 emissions reduction goals established by SB 32, which is why it differs from the bright-line threshold of 1,150 $MTCO_2e$ used in the certified Final EIR. The bright-line threshold of 1,150 $MTCO_2e$ was used before the adjustment to account for SB 32. Should the emissions exceed the bright-line threshold of 920 MT CO_2e, UC Santa Cruz would also have the option of applying a similarly scaled service population efficiency-based threshold. Using the efficiency-based threshold of 4.9 MT CO_2e per service population per year and the relationship between the targets set forth in Assembly Bill (AB) 32 and Senate Bill (SB) 32, a service population efficiency-based threshold for year 2025 is calculated at 3.9 MT CO_2e per service population per year.

a. Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction of the Modified Project would generate temporary GHG emissions primarily because of operation of construction equipment on-site as well as from vehicles transporting construction workers to and from the project site and heavy trucks to transport building materials and soil. As shown in Table 5, construction of the Modified Project would generate an estimated total of 10,362 $MTCO_2e$. Amortized over a 30-year period pursuant to the methodology from the certified Final EIR, construction of the Modified Project would generate an estimated 345 $MTCO_2e$ per year. Past years,

such as 2019, are presented in Table 5 because this construction already occurred, either entirely or partially, as part of the Original Project, and therefore the emissions from these construction activities should be accounted for as part of the Modified Project, if approved.

Table 5 Estimated Construction GHG Emissions

Year	Emissions (MT of CO_2e)
2019	244
2020	2,035
2021	1,573
2022	1,647
2023	1,950
2024	1,680
2025	1,233
Total	**10,362**
Amortized over 30 years	**345**

MT = metric tons; CO_2e = carbon dioxide equivalents

Notes: Emissions modeling was completed using CalEEMod. See Appendix A for modeling results.

Operation of the Modified Project would generate GHG emissions associated with area sources (e.g., re-painting and landscape maintenance), energy and water usage, vehicle trips, and wastewater and solid waste generation. Mobile source emissions that would be generated by vehicle trips to and from the project site were estimated using the trip rate provided in the Trip Generation Analysis (Fehr & Peers 2022a) (see Appendix B). As shown in Table 6, annual operational emissions generated by the Modified Project combined with amortized construction emissions would total approximately 2,283 MT CO_2e per year. The service population emissions would be 2.2 MT CO_2e, which would not exceed the service population efficiency-based threshold of 3.9 MT CO_2e per service population per year. The emissions of the Modified Project mostly vary from the Original Project because a newer version of CalEEMod has been used for the emissions estimate of the Modified Project, which incorporated updates to the Title 24 standards pertaining to energy use and efficiency; updates of emissions factors in vehicle; and revised utility intensity factors.

Regardless of increased emissions compared to the Original Project, the emissions of the Modified Project would not exceed thresholds of significance, and similar to the Original Project, impacts associated with the Modified Project would be less than significant. Therefore, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to GHG emissions.

Table 6 Combined Annual GHG Emissions

Emission Source	Annual Emissions (MT of CO_2e per year)
Construction	**345**
Operational	
Area	18
Energy	779
Mobile	829
Solid Waste	239
Water	73
Total Emissions (Annual)	**2,283**
Adjusted Annual Bright-Line Threshold (Annual)	920
Service Population (Students)*	1,015
Service Population Emissions (Annual)	**2.2**
Service Population Efficiency-Based Threshold (Annual)	3.9
Threshold Exceeded?	**No**

MT = metric tons; CO_2e = carbon dioxide equivalents

Notes: Emissions modeling was completed using CalEEMod. See Appendix A for modeling results.

* Based on the Modified Project providing up to 450 additional beds

b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

EO S-3-05, AB 32, SB 350, and SB 32

AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020. As discussed above, the SLOAPCD thresholds are designed to achieve reductions consistent with AB 32 statewide GHG reduction goals. The Modified Project would not exceed adjusted SLOAPCD bright-line threshold of 920 MT CO_2e per year. Thus, it would not conflict with AB 32 policies to reduce GHG emissions.

SB 32 further codified the state's GHG emission reduction target of 40 percent below 1990 levels by 2030. Per the 2017 Scoping Plan adopted by CARB, it is up to local agencies and governments to establish policies and thresholds to ensure land use development is consistent with statewide targets for 2020 and 2030. The Plan does not provide specific project-level thresholds to apply to land use development. Therefore, UC Santa Cruz developed a 2025 threshold of 920 MT CO_2e per year and 3.9 MT CO_2e per service population per year to ensure that the project would be on the trajectory to meet 2030 emissions reduction goals established by SB 32. As discussed under criteria (a), the Modified Project would not exceed the threshold of 3.9 MT CO_2e per service population per year and would therefore be consistent with SB 32 and SB 350. Additionally, over time the project would become more efficient as State-wide measures, such as SB 100 and electric vehicle adoption,

are implemented. The carbon intensity of the electricity used in the buildings would continue to decrease and cars being driven to campus would become cleaner over time with the increased use of electric vehicles and clean fuels. The Modified Project's GHG emissions would not conflict with statewide policies adopted for the purpose of reducing the emissions of GHG, including AB 32, SB 32, and SB 350. The Modified Project would not conflict with State GHG reduction regulations, and impacts would be less than significant. Because impacts of the Modified Project would be less than significant, the Modified Project would not result in any new significant impact or a substantial increase in the severity of previously identified significant impacts related to conflicts with state bills and executive orders related to GHG emissions.

UC Sustainability Practices Policy

The UC Sustainable Practices Policy requires each campus to develop strategies for meeting the University's goals in nine areas of sustainable practices. The Modified Project would not conflict with applicable goals set forth in the Policy as it would largely be built as described in the certified Final EIR for the Original Project in terms of the project's sustainability features, which were described in Section 2.4.11 of the certified Final EIR. The proposed new buildings would meet the energy performance targets required by the Policy and include features to minimize energy use and emissions. Additionally, the Modified Project would not result in substantial emissions from the use of automobiles. The project would increase the number of students living on-campus, therefore reducing vehicle trips to the campus from students that would otherwise live off-campus. The project would also include multimodal transportation improvements, such as pedestrian paths and bike parking, to encourage walking, bicycling, or taking transit to and from the project site (Fehr & Peers 2018). Finally, the project would include adequate facilities to accommodate recycling and composting, consistent with the campus net zero waste policy. Similar to the Original Project, impacts of the Modified Project would be less than significant. Therefore, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to conflicts with the UC sustainability practices and policies pertaining to GHG emissions.

UC Santa Cruz Climate and Energy Strategy

The Climate and Energy Strategy (CES) is UC Santa Cruz's equivalent of a climate action plan (CAP) and addresses how the campus would achieve its two climate and energy goals: achieving carbon neutrality by 2025 from Scope 1 and Scope 2 sources and mitigating the impacts of the Cap and Trade Regulation. One of the strategies to meet these goals is to establish energy use intensity (EUI) targets for new capital projects that achieve the UC Sustainable Practices Policy "stretch targets" at a minimum, and strive to achieve a 60 percent reduction in EUI below 1999 benchmarks (by building type) in conjunction with achieving Net Zero Site Source targets for major capital projects. The project has been designed to meet a minimum LEED silver certification and the proposed buildings are being designed to be highly energy efficient meeting or exceeding the EUI energy use intensity targets. Therefore, the Modified Project would not conflict with the CES and impacts would be less than significant, similar to the Original Project. Because impacts of the Modified Project would be less than significant, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to conflicts with the UC Santa Cruz Climate and Energy Strategy.

3.9 Hazards and Hazardous Materials

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less than Significant Impact, Pages 4.9-12 through 4.9-13	No	No	No	No Mitigation Was Necessary
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?	Less than Significant Impact, Pages 4.9-13 through 4.9-15	No	No	No	Yes
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	No Impact, Page 4.18-3	No	No	No	No Mitigation Was Necessary
d. Be located on a site that is included on a list of hazardous material 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?	No Impact, Page 4.18-3	No	No	No	No Mitigation Was Necessary
e. For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for	No Impact, Page 4.9-11	No	No	No	No Mitigation Was Necessary

		What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
	people residing or working in the project area?					
f.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less than Significant Impact, Page 4.9-15	No	No	No	Yes
g.	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	Less than Significant Impact, Page 4.9-16	No	No	No	Yes

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

As discussed in the certified Final EIR on page 4.9-12, construction activities associated with the Original project would require handling hazardous or flammable materials including gasoline, diesel fuels, oils, lubricants, and hydraulic fluids associated with construction equipment operation. Small quantities of additional common hazardous materials would be used, produced, and stored on-site during construction, including antifreeze and used coolant, latex and oil-based paint, paint thinners, cleaning products, and herbicides which would not be substantially different from household chemicals and solvents already in general and wide use throughout the campus. Construction activities associated with the Modified Project would be similar in type and intensity to the Original Project and would utilize the same hazardous materials in similar quantities.

Operation of the Original Project would involve academic and residential services for the Kresge College campus. It would not involve the routine transport, use, or disposal of hazardous materials, other than cleaning products and maintenance materials. Propane would be stored in fuel tanks and used to operate the emergency generators if natural gas supply to the two generators is interrupted. Routine use of propane on the project site would not be expected. The Modified Project would have the same operation activities as the Original Project and would not involve adding additional emergency generators to the project site. Therefore, Modified Project operation would not create a significant new hazard through the routine transport, use, or disposal of hazardous materials beyond that analyzed by the certified Final EIR. In addition, regulations addressing the storage of hazardous materials in excess of certain qualities such as California Health and Safety Code Section 25500, et seq. and the related regulations in 19 California Code of Regulations Section 2620, et seq. would ensure that the transport, use, and storage of hazardous materials during construction and operation would be conducted in accordance with all applicable state and federal laws, such as the Hazardous Materials Transportation Act, Resource Conservation

and Recovery Act, the California Hazardous Materials Management Act, and California Code of Regulations Title 22. Compliance with state and federal laws would further reduce potential impacts related to hazardous materials. Therefore, the Modified Project would not result in any new significant impact or a substantial increase in the severity of a previously identified significant impact related to the routing transport, use, or disposal of hazardous materials.

b. Would the project 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?

As described in the certified Final EIR on page 4.9-13, in the unlikely event of an accident involving the transport of hazardous wastes on roadways abutting the project site, the Original Project would comply with the Santa Cruz County Hazardous Materials Area Plan and contact the Santa Cruz Hazardous Materials Interagency Team if necessary to reduce impacts from accidental upset to the extent feasible. As discussed under criterion a, the transport of hazardous materials during Original Project construction and operation would be conducted in accordance with all applicable state and federal laws. All stored hazardous waste must meet UC Santa Cruz Environmental Health and Safety guidelines. UC Santa Cruz transports, uses, stores, and disposes of hazardous materials in a manner that protects the public and environment. Similar to the Original Project, the Modified Project would be required to comply with the Santa Cruz County Hazardous Materials Area Plan, contact the Santa Cruz Hazardous Materials Interagency Team in the event of an accidental upset, comply with all applicable state and federal laws, and abide by UC Santa Cruz Environmental Health and Safety guidelines which would reduce impacts associated with accidental release of hazardous materials into the environment. Enforcement of these acts and rapid response by local agencies would ensure that hazards to the public or environment through accidental release of hazardous materials into the environment would be less than significant under the Original Project as well as the Modified Project.

As discussed in the certified Final EIR for the Original Project, buildings within the project site identified for reconstruction or demolition may contain lead and/or asbestos due to their age. Similar to the Original Project, the Modified Project also has the potential to expose project construction workers to lead and/or asbestos. UC Santa Cruz requires all remodeling and demolition projects to conduct a lead and asbestos survey prior to construction, consistent with 2005 LRDP EIR Mitigation Measure HAZ-7, and to perform appropriate remediation in the event contamination is discovered. UC Santa Cruz also requires contractors who disturb or potentially disturb asbestos and/or lead to comply with all federal, state, and local rules and regulations regarding their handling, and requires contractors to stop work and inform UC Santa Cruz if they encounter materials believed to be asbestos, lead, polychlorinated biphenyls, or other hazardous materials. In addition, construction activities would be required to comply with the California Division of Occupational Safety and Health regulations regarding lead-based materials and California Code of Regulations Section 1532.1 requires testing, monitoring, containment, and disposal of lead-based materials to ensure exposure levels do not exceed California Division of Occupational Safety and Health standards. Compliance with federal and state regulations, campus policies, and current Environmental Health and Safety procedures would minimize the potential for workers to be exposed to contaminated building materials.

Therefore, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to reasonably foreseeable accidental release of hazardous materials.

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

As described in Section 4.18, *Effects Found Not to be Significant,* of the certified Final EIR, existing schools within 0.25 mile of the UC Santa Cruz campus boundaries include the Santa Cruz Waldorf School, northwest of the campus in the Cave Gulch neighborhood, and Westlake Elementary School, southeast of the campus on High Street. The Original Project would not involve sources or activities that would emit hazardous emissions that could affect nearby schools. As the Modified Project would conduct similar types and intensities of construction and operation activities as the Original Project, it would not result in any new significant impact or a substantial increase in the severity of a previously identified significant impact related to hazardous emissions or hazardous materials within proximity to schools.

d. Would the project be located on a site that is included on a list of hazardous material 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?

As described in Section 4.18, *Effects Found Not to be Significant,* of the certified Final EIR, the project site is not located on properties associated with a hazardous site listed under Government Code Section 65962.5, the Cortese List. As the Modified Project would be located on the same site as the Original Project, the Modified Project would not result in a significant hazard to the public or the environment and no impact would occur. The Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to contaminated sites.

e. For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

The campus is not located within two miles of a public airport or public use airport. The closest public airport is the Watsonville Municipal Airport approximately 15 miles east of the main campus. Due to the project site's distance to the closest public airport, neither the Original Project nor the Modified Project would result in a safety hazard associated with a public airport. Therefore, consistent with the findings of the certified Final EIR for the Original Project, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related airport hazards or noise.

f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Original Project construction would not interfere with the EOP for the main campus through construction-related road closures. The Original Project would be required to implement 2005 LRDP EIR Mitigation Measure HAZ-9A which would require that construction work minimize obstruction to traffic, contractors notify a UC Santa Cruz representative at least two weeks prior to any road closure, alternatives route be clearly marked, fire hydrants be kept accessible, and alternative routes be reported to campus police and fire. The Original Project would not alter existing vehicle circulation through campus and would provide improved pedestrian connections between Kresge College and the main UC Santa Cruz campus via accessibility improvements to the North Bridge.

Since the Modified Project would require Mitigation Measure HAZ-9A and consists of the same operational uses and similar construction activities, the Modified Project would not substantially

change the overall project's potential to conflict with an adopted emergency response plan or emergency evacuation plan or interfere with traffic on adjacent streets. The Modified Project would therefore not have any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to emergency response and evacuation plans.

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Areas surrounding the UC Santa Cruz campus are prone to wildfires due to the accumulation of vegetation, steep and dry slopes, and the presence of vulnerable structures. Kresge College is not identified as a fire hazard area; however, the on-site tree coverage and steep slopes to the east and west of the project site make the site vulnerable to wildfires. The Modified Project would increase the number of people residing at the project site. However, both the Original Project and Modified Project would be designed to reduce fire risk in compliance with CBC Chapter 7A and California Residential Code Chapter R337, both of which contain standards applicable to the construction of buildings in wildfire-prone areas. The Modified Project's design would be reviewed by the Campus Fire Marshall and would be required to implement 2005 LRDP EIR Mitigation Measures HAZ-10A and HAZ-10D that require the continuation of annual inspections, adherence to requirements outlined in the International Uniform Interface Code, and assurance that all building construction complies with the minimum requirements adopted by the State Fire Marshal's Office. Implementation of fire prevention measures and proper building design, consistent with existing regulations, would ensure that impacts resulting from fire hazards would be less than significant. Because the Modified Project would be built on the same project site as the Original Project, the Modified Project would not increase the likelihood of exposing people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. Therefore, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to exposure to wildlife fire hazards. For further discussion of wildfire risk to the Modified Project, please refer to Section 3.20, *Wildfire.*

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3.10 Hydrology and Water Quality

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	Less than Significant Impact, Pages 4.10-12 through 4.10-14	No	No	No	No Mitigation Was Necessary
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	Less than Significant Impact, Pages 4.10-14 through 4.10-15	No	No	No	No Mitigation Was Necessary
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	Less than Significant Impact, Pages 4.10-15 through 4.10-17	No	No	No	Yes
(i) Result in substantial erosion or siltation on- or off-site	Less than Significant Impact, Pages 4.10-15 through 4.10-17	No	No	No	Yes
(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site	Less than Significant Impact, Pages 4.10-15 through 4.10-17	No	No	No	Yes
(iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater	Less than Significant Impact, Pages 4.10-	No	No	No	Yes

		What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
	drainage systems or provide substantial additional sources of polluted runoff	15 through 4.10-17				
(iv)	Impede or redirect flood flows?	No Impact, Page 4.10-10	No	No	No	No Mitigation Was Necessary
d.	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	No Impact, Page 4.10-10	No	No	No	No Mitigation Was Necessary
e.	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	N/A	No	No	No	No Mitigation Was Necessary

a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Construction

As discussed on page 4.10-12 of the certified Final EIR, the Original Project would involve excavation and grading which could result in accelerated erosion of on-site soils and increased sedimentation which could negatively affect surface water quality. During grading and soil storage, weather conditions such as strong wind or heavy rain could lead to excavated soil migrating off-site and causing water pollution. Demolition of buildings and reconstruction of buildings could also result in structural and concrete residue and dust migrating off-site and adversely affecting water quality. Types of pollutants contained in runoff from construction sites would be typical of urban areas and could contain sediments and contaminants such as oils, fuels, paints, and solvents. The potential for degradation of water quality during construction activities was identified as highest for local water bodies such as Cave Gulch and Moore Creek. Construction activities could also potentially result in the accidental release of hazardous materials found on a typical construction site including diesel fuel, gasoline, lubricant oils, hydraulic fluid, antifreeze, and cement slurry. Accidental spills or releases of hazardous materials could impact water quality indirectly through runoff into surface waters or percolating into permeable surfaces and contaminating groundwater. Because Original Project construction would disturb more than one acre of land, it is subject to the Construction General Permit (CGP) adopted by the State Water Resources Control Board (SWRCB) and was required to develop a SWPPP. Compliance with the CGP would prevent sedimentation and soil erosion through implementation of a SWPPP. A SWPPP is a project specific document that describes

the Best Management Practices (BMPs) implemented by the developer. Required elements of an SWPPP include (1) site description addressing the elements and characteristics specific to the Project site; (2) descriptions of best management practices (BMPs) for erosion and sediment controls; (3) BMPs for construction waste handling and disposal; (4) implementation of approved local plans; and (5) proposed post-construction controls, including a description of local post-construction erosion and sediment control requirements. Compliance with the requirements of the applicable CGP would reduce the potential for accidentally released or leaked hazardous materials to impact water quality and Phase II MS4 (Municipal Separate Storm Sewer Systems) permit would reduce potential impacts from erosion and pollutant-laden stormwater discharges during construction activities to less than significant levels.

Changes to the Original Project under the Modified Project would involve reconstruction of seven buildings and construction of a new infill building (Kresge L building) in the south end of the project site. Excavation and grading activities may be slightly more than was assumed for the Original Project. The Modified Project would involve operation of similar construction equipment as the Original Project due to similar kinds of typical construction activities occurring on site. As such, similar potential impacts due to accidental spills or releases of hazardous materials which could impact water quality would be relevant under the Modified Project. However, the Modified Project would be subject to the Construction General Permit and would be required to implement the SWPPP developed under the Original Project.

Construction of the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact on water quality.

Operation

As discussed on page 4.10-13 of the certified Final EIR, the Original Project would result in in approximately 149,870 square feet of impervious surfaces. Pollutants carried by runoff from newly paved surfaces and landscaping could enter the local drainage system or groundwater. The UC Santa Cruz campus stormwater conveyance system directs stormwater from developed areas to dissipation and infiltration structures in natural areas. UC Santa Cruz is a NPDES Phase II MS4 Permittee. All construction projects on campus are required to comply with the UC Santa Cruz Post Construction Requirements (PCRs). Compliance with the PCRs would reduce the risk associated with Original Project operation for water degradation on- and off-site from soil erosion and other pollutants related to project operation. The Original Project includes stormwater quality management measures such as raised rain-garden planters, bioretention rain gardens, two subsurface tanks, re-use of existing surface runnels (i.e., narrow channels in the ground through which liquid can flow), and subsurface pipes for water conveyance. Pursuant to 2005 LRDP EIR Mitigation Measure HYD-3D and as specified by the UC Santa Cruz Storm Water Management Plan, the Original Project would have stormwater detention and retention systems to minimize the amount of runoff that leaves the project site. Regardless of the implementation of Mitigation Measure HYD-3D, the project includes stormwater management and is consistent with the UC Santa Cruz Storm Water Management Plan. As a result, these systems would minimize the transport of sediment and other pollutants to downstream water bodies.

As described in Section 2, *Project Description,* the Modified Project would result in an additional 41,100 square feet of impervious surfaces, which is a 27 percent increase compared to the Original Project. The additional surface runoff associated with Modified Project operation would be handled by the infrastructure proposed under the Original Project discussed on pages 4.10-13 and 4.10-14 of the certified Final EIR, as well as an additional sub-surface retention tank and additional associated

stormwater management features similar to the Original Project. As described above, the project would continue to be required to comply with the MS4 Permit and the PCRs intended to regulate stormwater discharges.

Through compliance with state and regional regulations, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact on water quality and wastewater discharge requirements.

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Water supply to the project site would be provided by the City of Santa Cruz Water Department (SCWD). On average, 95 percent of SCWD's water supply comes from local surface water sources and up to five percent of SCWD's water supply comes from groundwater. According to the City of Santa Cruz's 2020 Urban Water Management Plan (UWMP), the City is capable of meeting projected water demand during normal and single dry years through 2045. However, under multiple dry years, the City has inadequate supplies for multiple dry years and severe drought conditions through 2045. In response to these projected water supply shortages, SCWD is pursuing future water projects such as the Water Supply Augmentation Strategy, Santa Cruz Water Rights Project, and Santa Cruz Water Program (City of Santa Cruz 2021). As discussed further in Section 3.19*, Utilities and Service Systems*, the City of Santa Cruz's 2020 UWMP identifies insufficient water supply to meet the demand projected under full development of the 2005 LRDP. However, even in the case of a water shortage, according to the City's Water Shortage Contingency Plan, response to a water shortage would be water reduction shortages (City of Santa Cruz 2021).

UC Santa Cruz has successfully met the City's mandatory water reduction goals in recent drought years and continues to implement water demand reduction measures such as the Original Project's stormwater collection and re-use system. Based on UC Santa Cruz's demonstrated ability to meet water reduction goals during drought years and implementation of 2005 LRDP EIR mitigation measures, construction and operation of the Original Project would not result in an increased use of groundwater or a lowering of local groundwater levels compared to current conditions (see certified Final EIR pages 4.10-14 and 4.10-15). The Original Project would increase the amount of impervious surface area in the form of additional walkways, paved gathering spaces, and building square footage and would include stormwater control measures to reduce the rate and amount of runoff and to promote infiltration of stormwater. Additionally, the project site is not a groundwater recharge area. Due to the Original Project's design features and location outside of a groundwater recharge area, construction and operation would have less than significant effects related to groundwater levels and recharge rates.

The Modified Project would include new impervious surfaces with the construction of the infill Kresge building L in the south end of the project site. Compared to existing conditions and the Original Project, the minor amounts of new impervious surface would be inconsequential to infiltration of precipitation into the ground. This is because new impervious surfaces would be surrounded by pervious ground surface, where precipitation could infiltrate the ground. Accordingly, the Modified Project would not introduce substantial amounts of new impervious surfaces which could impede groundwater recharge.

Impacts on groundwater supplies and groundwater recharge would, as with the Original Project, be less than significant. The Modified Project would therefore not have any new significant impacts or

a substantial increase in the severity of a previously identified significant impact on groundwater supplies and recharge.

c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. Result in substantial erosion or siltation on- or off-site?

ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

As discussed on page 4.10-15 of the certified Final EIR, the Original Project would alter the existing drainage pattern of the site through introduction of impervious surfaces and project infrastructure. The introduction of impervious surfaces would increase the amount of total annual runoff and the rate of peak runoff leaving the project site. Increases in the amount and rate of runoff could result in increased erosion and siltation off-site. However, implementation of 2005 LRDP EIR Mitigation Measure HYD-3D, which would maximize infiltration by capturing runoff preferably near the area where new runoff is created. Mitigation Measure HYD-3D would also ensure that altered drainage pattern would not result in substantial erosion, siltation, or flooding on- or off-site by capturing runoff close to the source and allowing it to infiltrate the ground. In addition, compliance with the UC Santa Cruz Storm Water Management Plan, the MS4 Permit and the PCRs and implementation of the Original Project stormwater management features development would maximize on-site infiltration, minimize off-site runoff, and would not result in the discharge of stormwater that would result in off-site erosion or flooding or exceed the stormwater conveyance capacity of existing or planned stormwater drainage systems.

The Modified Project would be located on the same site as the Original Project. Through compliance with the UC Santa Cruz Storm Water Management Plan, the MS4 Permit and the PCRs, and implementation of the Original Project stormwater management features pursuant to 2005 LRDP EIR Mitigation Measures HYD-3C and HYD-3D, any alterations to the existing drainage pattern of the project site due to the Modified Project would be adequately addressed. The Modified Project would therefore not have any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to erosion and runoff from altered drainage patterns.

c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

iv. Impede or redirect flood flows?

As discussed on page 4.10-10 of the certified Final EIR, the project site would not be subject to flooding. According to the Federal Emergency Management Agency's flood mapping service, the project site is in Zone X, an area of minimal flood hazard (Federal Emergency Management Agency 2012). Therefore, the Original Project and the Modified Project would not be in an area at risk of flood flows. Therefore, the Modified Project would not have any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to impeding or redirecting flood flows.

d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

As discussed on page 4.10-10 of the certified Final EIR, campus development under the 2005 LRDP, including the project site, would not be subject to inundation by seiche, tsunami, or mudflow. The main campus is not in an area subject to inundation by seiche, tsunami, or mudflow (UC Santa Cruz 2006; California Emergency Management Agency 2009). Because tsunami, seiche, and mudflow risks are site-specific and the Modified Project would be located on the same site as the Original Project, the Modified Project would therefore not have any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to the potential release of pollutants in flood hazard, tsunami, or seiche zones.

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Although this impact was not explicitly addressed in the certified Final EIR because it was not included in the CEQA Guidelines in effect at the time, as discussed throughout this section of the Addendum, the Modified Project would have no new or more severe significant impacts related to water quality or groundwater than those identified in the previously certified Final EIR for the Original Project. The Modified Project would comply with applicable NPDES permit requirements and would have an SWPPP as discussed under criterion a, which would ensure the project would not result in water quality impacts that conflict with the *Water Quality Control Plan for the Central Coastal Basin*.

The closest underlying groundwater basin to the project site is the West Santa Cruz Terrace Groundwater Basin which was identified as a very low priority basin (Department of Water Resources [DWR] 2018; DWR 2020). All basins designated as high- or medium-priority basins must be managed by a groundwater sustainability agency under a groundwater sustainability plan in compliance with Water Code Section 10727 et seq. (UC Santa Cruz 2021b). As UC Santa Cruz is not within a designated groundwater basin and the closest groundwater basin to the project site does not have an associated groundwater sustainability plan, the Original Project would not conflict with or obstruct implementation of a sustainable groundwater management plan. The Modified Project would occur at the same site as the Original Project, and therefore also would not conflict with or obstruct implementation of a sustainable groundwater management plan. The Modified Project would therefore not have any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to its potential to conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

3.11 Land Use and Planning

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Physically divide an established community?	Less than Significant Impact, Pages 4.11-7 through 4.11-13	No	No	No	No Mitigation Was Necessary
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	Less than Significant Impact, Pages 4.11-7 through 4.11-13	No	No	No	No Mitigation Was Necessary

a. Would the project physically divide an established community?

The certified Final EIR discusses the physical impacts of the Original Project when discussing land use patterns at p.4.11-7-12. The Original Project involves demolition, renovation and new construction including three residential halls clustered in the undeveloped Kresge Meadow, which were designed to follow the natural grade of the site and are located next to the existing road and the existing open space within Kresge Meadow. The remaining open space would be developed to improve overall connectivity by building accessible pedestrian circulation which would connect the community of Kresge College residents. Similar to the Original Project, the Modified Project would involve demolition, renovation and reconstruction, and new construction to an existing college on the UC Santa Cruz campus. The Modified Project would not introduce any new construction which could physically divide the UC Santa Cruz campus or another established community. The reconstructed and renovated buildings are generally sited on the same footprint as existing buildings. A new Kresge L Building is proposed in the south end of the site and would be adjacent to other infill buildings to expand the community of continuing students. The Modified Project would not introduce any physically divisive elements. The Modified Project includes rebuilding exterior walkways which would improve physical connections within the established Kresge College community and greater UC Santa Cruz campus and surrounding community. Accordingly, impacts of the Modified Project would be less than significant. Therefore, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impacts related to dividing established communities.

b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

As discussed in the certified Final EIR on pages 4.11-7 through 4.11-12, the Original Project was analyzed for its potential to conflict with the 2005 LRDP principals and land use designations adopted for the purpose of avoiding or mitigating an environmental effect. The Original Project was found to be consistent with the LRDP's principals focused on promoting sustainable practices in campus development and campus operations, integrating the natural environment and built campus environment through land use patterns, maintaining UC Santa Cruz's core configuration, encouraging sustainability and efficiency in building layouts, respecting major landscape and vegetation features, maintaining continuity of wildlife habitats, maintaining the compatibility between exterior landscaping with surrounding native plant communities, maintaining natural surface drainage flows, and promoting a walkable campus.

The Modified Project involves renovation, reconstruction, and new construction, similar to the Original Project, which would have much higher energy efficiency compared to the existing buildings on the project site. Therefore, like the Original Project, the Modified Project would not conflict with energy sustainability principals of the LRDP. Similarly, the Modified Project would occur on the same site as the Original Project and have the same approximate configuration and land uses. The Modified Project would result in similar impacts to landscaping and vegetation features, drainage flows, and wildlife as the Original Project because both occur on the same site. Accordingly, the Modified Project would not conflict with the LRDP principals and land use designations adopted for the purpose of avoiding or mitigating an environmental effect on the UC Santa Cruz Campus.

Land-Use Patterns

The Modified Project would focus on increasing residential capacity primarily by reconstructing existing buildings and constructing new buildings as described in Section 2, *Project Description.* For the most part, the Modified Project would be largely built out as described in the certified Final EIR by maintaining existing building footprints while also increasing on-campus student housing density. In addition, by reconstructing building R8 that would have been demolished under the Original Project, the Modified Project would reduce the alteration of land use patterns found on the project site or the traditional land use pattern of the UC Santa Cruz campus compared to the Original Project.

Sustainability

As described on page 4.11-18 of the certified Final EIR, the Original Project would comply with the UC Sustainable Practices Policy and UC Santa Cruz 2017-2022 Campus Sustainability Plan. The UC Sustainable Practices Policy and UC Santa Cruz 2017-2022 Campus Sustainability Plan both address recycling, energy conservation, alternatives to single-occupant vehicle transportation, and water conservation. The Modified Project would occur on the same site as the Original Project with a similar configuration. The Modified Project would promote sustainability practices in design and campus operations through compliance with the UC Sustainable Practices Policy and UC Santa Cruz 2017-2022 Campus Sustainability Plan (UC Santa Cruz 2019b). The Modified Project would comply with UC Santa Cruz's efforts to achieve net zero waste by 2020; comply with the strategies in the CES for major capital projects and sustainable building policies; rebuild pedestrian walkways and facilitate pedestrian circulation to reduce single-occupant vehicle transportation; and comply with

water-related 2005 LRDP EIR mitigation measures discussed in further detail in Section 3.19, *Utilities and Service Systems*.

Natural Resources

The Modified Project would not require major grading or recontouring of the project site as most of the activities proposed under the Modified Project on existing building sites and as infill development within the project site. The Modified Project would involve additional tree removal to accommodate reconstruction of additional buildings, as well as construction of new buildings in the south end of the project site. However, the project would preserve as many healthy trees as possible and would either protect or replace in-kind to the extent feasible the original ornamental plantings The Modified Project would comply with 2005 LRDP EIR Mitigation Measure AES-5A, which requires design review by the UC Santa Cruz Design Advisory Board, to ensure development would be visually consistent with the visual character and quality of the project area. The Modified Project would take place within the same project footprint as the Original Project and would not adversely affect wildlife habitat with implementation of applicable mitigation measures described in Section 3.4, *Biological Resources*. The Modified Project would be served by the stormwater management system proposed under the Original Project which would promote the infiltration, storage, and reuse of captured stormwater. Therefore, the Modified Project would be consistent with the 2005 LRDP principals of respecting major landscape and vegetation features, maintaining continuity of wildlife habitats, designing exterior landscaping to be compatible with surrounding native plant communities, and maintaining natural surface drainage flows.

Transportation

The Modified Project would add up to 450 beds to the Kresge College complex, resulting in an increase of the number of students living on the UC Santa Cruz campus by approximately 450 students. This would reduce the need for single-occupant vehicle trips by students commuting from off-campus residences compared to the Original Project. For further information regarding transportation, please refer to Section 3.17, *Transportation.*

Land Use Consistency

The project site is designated Colleges and Student Housing in both the 2005 LRDP and 2021 LRDP (UC Santa Cruz 2006 and 2021c). The Colleges and Student Housing land use designation in the 2005 LRDP allows for the construction of new colleges, expansion of new colleges, new student housing, family student housing projects, and housing-related parking and recreational amenities. Under the 2021 LRDP, the Colleges and Student Housing land use designation in the allows for student housing, food services, student services, academic, student support, childcare, and athletics and recreation spaces. Therefore, the Modified Project is compatible with the applicable land use designation in the 2005 LRDP and 2021 LRDP. Both the Original Project and Modified Project would be compatible with the existing academic, residential, and student support services on the Kresge College complex and would be compatible with the uses on the main UC Santa Cruz campus. Since the Modified Project's residential use would be similar to uses proposed under the Original Project, the Modified Project would be consistent with the land uses allowed on the project site.

Overall, as described above, the Modified Project would not conflict with land uses plans, ordinances, and policies adopted for the purpose of avoiding or mitigating an environmental effect, including the 2005 LRDP and 2021 LRDP. Like the Original Project impact described in the certified Final EIR, impacts of the Modified Project would be less than significant. Therefore, the Modified

Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant related to consistency with the 2005 LRDP and 2021 LRDP applicable land uses plans, ordinances, and policies.

3.12 Mineral Resources

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	No Impact, Pages 4.18-3 through 4.-18-4	No	No	No	No Mitigation Was Necessary
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?	No Impact, Pages 4.18-3 through 4.-18-	No	No	No	No Mitigation Was Necessary

a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b. Would the project 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?

As described in Section 4.18, *Effects Found Not to be Significant,* of the certified Final EIR, the Original Project would not result in the loss of availability of a known mineral resource or a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. No known mineral resources are located on the project site. As the Modified Project would be located on the same project site as the Original Project, the Modified Project would also not result in a change in access or ability to recover known mineral resources in the region. Consistent with the findings of the certified Final EIR for the Original Project, the Modified Project would not have any significant impacts or a substantial increase on the severity of a previously identified significant impact on mineral resources or important mineral resource recovery sites.

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3.13 Noise

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Significant and Unavoidable Impact, Pages 4.12-8 through 4.12-12 and 4.12-13 through 4.12-15	No	No	No	No
b. Generate excessive groundborne vibration or groundborne noise levels?	Less than Significant Impact, Pages 4.12-12 through 4.12-13	No	No	No	Yes
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels?	No Impact, Page 4.12-6	No	No	No	No Mitigation Was Necessary

a. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction

As discussed on page 4.12-9 and in Table 4.12-3 of the certified Final EIR, noise levels from construction of the Original Project would temporarily reach an estimated 89 dBA Leq for sensitive receptors located approximately 50 feet away. This would be a significant change in noise level considering the highest measured peak-hour ambient noise level at the project site without construction was 64 dBA Leq (see page 4.12-3 of the certified Final EIR). Original Project construction noise could potentially exceed the applicable standard of 80 dBA Leq during daylight

hours for sensitive receptors located approximately 50 feet away. In accordance with 2005 LRDP EIR Mitigation Measure NOIS-1, which requires the UC Santa Cruz campus to approve a construction noise mitigation program, a plan has been prepared that includes specified noise-reducing measures which are being implemented during construction activities to the extent feasible. However, even with implementation of 2005 LRDP EIR Mitigation Measure NOIS-1, Original Project construction activities could result in noise levels that would exceed the threshold and would therefore continue to have significant and unavoidable impacts.

The Modified Project would take place on the same site as the Original Project and would include similar construction activities and equipment at similar distances from sensitive receptors. The Modified Project would involve construction not evaluated in the certified Final EIR, such as reconstruction of buildings with a new floor in several of the existing buildings, and a new housing infill building in the south end of the project site. However, construction of these components of the Modified Project would require the same types of equipment as construction of the other parts of the Modified Project and the Original Project and would not place construction substantially closer to sensitive receptors. Therefore, construction of the Modified Project would not introduce new or louder construction noise compared with the Original Project. The Modified Project would comply with 2005 LRDP EIR Mitigation Measure NOIS-1, which would ensure that the construction equipment staging area would be at least 100 feet away from noise sensitive receptors and minimize construction-related noise impacts to the extent feasible. However, like the Original Project, construction noise of the Modified Project would remain significant and unavoidable. Because the Original Project was also determined to have a significant and unavoidable impact, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to construction-related noise.

Operation

The certified Final EIR included discussion of whether new student housing would expose future residents to excessive noise levels from traffic on campus streets. Analysis found that the 24-hour average outdoor noise levels would not exceed 65 dBA CNEL (Community Noise Equivalent Level) which would be the standard noise level for the Original Project. Modern buildings of typical construction attenuate outdoor noise by approximately 25 dBA Leq. As such, the indoor noise level expected to be experienced by residents of the Original Project would be less than 40 dBA CNEL from motor vehicle traffic. This would not exceed the State's Title 24 standard of 45 dBA CNEL for interior noise level. As the Modified Project would reduce vehicle trips by increasing on-campus housing opportunities and reducing the need for students to commute from off-campus residences to the UC Santa Cruz campus, the average outdoor noise levels attributed to traffic would be similar or reduced compared to those analyzed in the certified Final EIR for the Original Project.

The Original Project would introduce several types of on-site operational noise sources including heating, ventilation, and limited air conditioning (HVAC) equipment at new buildings; proposed vehicle drop-off zones; and a new loading zone by Town Hall. As discussed on page 4.12-14 of the certified Final EIR, HVAC noise would reach an estimated 59.5 dBA Leq at a distance of 50 feet from the nearest residential halls or classrooms which would exceed measured ambient peak-hour noise levels ranging from 49 to 52 dBA Leq at the project site. However, since HVAC equipment already operates on the project site, new HVAC noise would be consistent with the noise levels of existing HVAC equipment. Therefore, the Modified Project's HVAC equipment on the reconstructed and renovated buildings, as well as the proposed infill building would not result in a substantial increase of at least 3 dBA CNEL relative to existing noise levels. The proposed elevators would include

mechanical equipment, but the equipment would generally be within the interior of buildings or the elevator shaft. Accordingly, the elevator noise would be comparable to HVAC noise. Noise from HVAC equipment and other on-site sources of noise associated with the Original Project were determined to result in less than significant impacts in the certified Final EIR, as described on page 4.12-15 of the certified Final EIR. As the Modified Project would occur on the same site and involve the same types of HVAC equipment and other sources similar in noise levels, impacts would be less than significant.

The Modified Project would continue to operate with similar uses to the Original Project. As discussed further in Section 3.17, *Transportation*, the Modified Project would reduce vehicle trips which would reduce vehicle-related noise on roads connecting the UC Santa Cruz campus to areas off campus, such as areas in the City of Santa Cruz. The Modified Project would up to 450 additional students to the project site, which could lead to increased noise levels associated with more residents. However, Kresge College has a noise policy requiring all residences, classrooms, and offices in proximity to one another to be mindful of noise, especially during certain hours. Noise should not be heard outside of apartments and, if excessive noise is audible, it will be reported to staff members. On weekdays (Sunday night through Thursday night) Quiet Hours begin at 10 pm. On weekends (Friday & Saturday nights), they begin at midnight (UC Santa Cruz 2021d). Residents' adherence to the noise police would reduce potential impacts related to increased residents under the Modified Project, and impacts would be less than significant.

As described above, the Modified Project would not have any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to substantial temporary or permanent increases in ambient noise levels.

b. Would the project generate excessive groundborne vibration or groundborne noise levels?

As discussed in the certified Final EIR on page 4.12-12, construction of the Original Project could intermittently generate strong vibration. Typical construction equipment that produces vibration include vibratory rollers for paving, caisson drills, bulldozers, loaded trucks, and jackhammers; Original Project construction would not be expected to use pile drivers which generate substantial vibration levels. Construction may occur closer than 50 feet to the nearest sensitive receptors for limited periods of time. Noise sensitive receptors include residences, classrooms, and other academic facilities on and near the Kresge College complex. Project sensitive receptors would include existing residences, classrooms, and other academic facilities that remain on and near the complex, as well as new residential and academic uses included in the Original Project and Modified Project that are noise sensitive. However, as described on page 4.12-12 of the certified Final EIR, the vibratory equipment operating within 50 feet of sensitive receptors would be mobile equipment that would not remain within 50 feet of receptors for the duration of construction. Implementation of 2005 LRDP EIR Mitigation Measure NOIS-1 would ensure that nearby sensitive receptors would be notified of construction, and that construction activities with vibratory impacts would be conducted during summer months and breaks when school would not be in session to the extent feasible, and would occur between 7:30 AM and 7:30 PM when most people are not sleeping.

The Modified Project would occur on the same project site as the Original Project and would not require additional types of construction equipment than those analyzed for the Original Project in the certified Final EIR. Therefore, there would be no new sources of groundborne vibration resulting from Modified Project construction. The Modified Project would have the similar uses as the Original Project and would not generate excessive groundborne vibration or noise levels during operation. Construction would utilize the same equipment as the Original Project, and therefore

equipment noise levels would be the same as shown in Table 4.12-4 of the certified Final EIR. Therefore, impacts would be less than significant, and the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to vibration.

c. Would the project be located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and expose people residing or working in the project area to excessive noise levels?

As described on page 4.6-12 of the certified Final EIR, the project site is not located within two miles of a public airport or public use airport or within two miles of a private airstrip. The closest public airport is the Watsonville Municipal Airport located approximately 15 miles east of the main UC Santa Cruz campus. Given the project site's distance from the proposed project would not expose people to excessive aircraft noise levels. Because the Modified Project would have no impacts related to noise within two miles of an airport, it would have no cumulative impacts related to excessive noise within two miles of an airport. The Modified Project would occur on the same project site as the Original Project and would thus not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to airport noise.

3.14 Population and Housing

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	Less than Significant Impact, Pages 4.13-5 through 4.13-7	No	No	No	No Mitigation Was Necessary
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	Less than Significant Impact, Page 4.13-7	No	No	No	No Mitigation Was Necessary

a. Would the project induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?

As discussed on page 4.13-5 through 4.13-7 of the certified Final EIR, there was demand for a total of 13,102 on-campus student beds which is 3,764 beds more than the 9,338 beds that were available at publication of the certified Final EIR. The Original Project would result in a net increase of up to 200 beds at the Kresge College complex, or an approximately 55 percent increase compared to the original 365 beds on the Kresge College complex. The Modified Project would result in up to 450 additional beds being added to the Kresge College complex, which when added to the original 365 beds and the up to 200 beds included in the Original Project would bring the total bed count at the Kresge College complex up to approximately 1,015 beds. The up to approximately 1,015 beds would be an approximately 178 percent increase compared to the original 365 beds,[3] or an approximately 80 percent increase compared to the 565 total beds of the Original Project.[4] Given the substantial demand for on-campus housing, the increase in student beds serves existing demand. Similar to the Original Project, the Modified Project would not induce population growth in the project vicinity, including within the City of Santa Cruz, beyond Association of Monterey Bay Area Governments (AMBAG) projections. Therefore, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to substantial unplanned population growth.

[3] (1,015 beds- 365 beds) X 100 percent = Approximately 178 percent

[4] (1,015 beds - 565 beds) X 100 percent = Approximately 80 percent

b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The Modified Project would result in up to 450 additional beds being added to the Kresge College complex in addition to the new 200 proposed in the Original Project for a net increase of up to 650 total beds. Because more housing would be created than would be removed and existing housing would not be demolished until the new housing would be constructed, no people or housing would be displaced due to implementation of the Modified Project. Similar to the Original Project, the Modified Project would not lead to a loss of housing or displacement of people leading to the need to construct replacement housing elsewhere. The Modified Project would therefore not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact from substantial displacement of existing people or housing.

3.15 Public Services

		What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:						
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:						
1	Fire protection?	Less than Significant Impact, Page 4.14-9	No	No	No	No Mitigation Was Necessary
2	Police protection?	No Impact Pages 4.14-8 through 4.14-9	No	No	No	No Mitigation Was Necessary
3	Schools?	No Impact, Pages 4.14-8 through 4.14-9	No	No	No	No Mitigation Was Necessary
4	Parks?	Less than Significant Impact, Pages 4.14-8 through 4.14-9	No	No	No	No Mitigation Was Necessary
5	Other public facilities?	Less than Significant Impact, Pages 4.14-	No	No	No	No Mitigation Was Necessary

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
	8 through 4.14-9				

a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for:

1. Fire protection?

The Santa Cruz Fire Department provides fire and emergency medical service response to the University. As discussed on page 4.14-9 of the certified Final EIR, the Original Project would increase the existing service population for fire protection on the UC Santa Cruz campus. Despite the anticipated growth in service population on campus, a new fire station would not be necessary

The Modified Project would result in up to 450 additional beds compared to the Original Project. As discussed under Section 3.14, *Population and Housing,* above, the increase in student beds under the Modified Project would accommodate existing demand. As such, the additional growth in service population on campus would not result in population growth requiring new or expanded fire protection facilities, as these student beds would house existing students. Additionally, the Kresge College complex is an area that is already serviced by the Santa Cruz Fire Department, and therefore this project would not expand the service area of the Fire Departments, Accordingly, impacts of the Modified Project would be less than significant similar to the Original Project. Therefore, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact to fire protection services.

2. Police protection?

3. Schools?

4. Parks?

5. Other public facilities?

Pages 4.14-8 and 4.14.9 of the certified Final EIR noted that potential impacts to public services from implementation of the 2005 LRDP would be less than significant. Both the Original Project and Modified Project would house existing students on campus and would not result in unplanned population growth in the area as described further in Section 3.14, *Population and Housing*.

The Modified Project would be constructed and operated under the growth assumptions for the 2005 LRDP. Police services for the Kresge Campus is provided by the UC Santa Cruz Police Department, and UC Santa Cruz does not propose an expansion of the existing police station or construction of a new police station. In addition, schools within the Santa Cruz City Schools District are operating below capacity and enrollment is projected to decline. The additional beds are not

designed for family housing, and therefore no school-aged population would reside within the Modified Project. As discussed in Section 3.16, *Recreation,* of this Addendum, the Modified Project would serve existing student populations and would not result in the need for new or expanded parks or library services.

In summary, new or expanded schools, parks, and other public facilities are not proposed as part of the Modified Project, nor would new or expanded facilities be required in response to increased demand from the Modified Project. Therefore, there would be no physical environmental impacts that could otherwise result in a new school or other public facility. Accordingly, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of the previously identified significant impact to public services.

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3.16 Recreation

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. 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?	No Impact, Page 4.18-4	No	No	No	No Mitigation Was Necessary
b. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	No Impact, Page 4.18-4	No	No	No	No Mitigation Was Necessary

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. Would the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

As described in Section 4.18, *Effects Found Not to be Significant,* of the certified Final EIR, the Original Project would facilitate a net increase of 200 student beds, which would accommodate the existing student population and would not increase student enrollment. The Modified Project would add up to another 450 student beds, for a net increase of up to approximately 650 student beds. Despite this increase, given the substantial demand for on-campus housing, the Modified Project would also accommodate the existing student population and would not increase student enrollment.

There are numerous recreational facilities on the UC Santa Cruz campus and throughout the City of Santa Cruz. Because the Modified Project, similar to the Original Project, would not increase student enrollment or population, there would not be a corresponding increased demand or use of parks and recreational facilities compared to the Original Project. Additionally, by locating more students on campus, the Modified Project could decrease student use of parks in the City of Santa Cruz. Therefore, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to recreation.

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3.17 Transportation

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	Less than Significant Impact, Pages 4.15-15 through 4.15-17 and 4.15-23 through 4.15-24	No	No	No	No Mitigation Was Necessary
b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	N/A	No	No	No	No Mitigation Was Necessary
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?	Less than Significant Impact, Page 4.15-18	No	No	No	No Mitigation Was Necessary
d. Result in inadequate emergency access?	Less than Significant Impact, Pages 4.15-18 through 4.15-23	No	No	No	Yes

The following section is based on a Trip Generation Analysis (Fehr & Peers 2022a) prepared for the Modified Project (refer to Appendix B).

a. Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

As described on pages 4.15-15 through 4.15-17 of the certified Final EIR, the Original Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system. As shown in Table 7, the Original Project would reduce the number of vehicle trips estimated for the campus compared to estimates used in the 2005 LRDP EIR due to an increase in on-campus student bed numbers. Because the Original Project would not increase gateway vehicle trips compared to those evaluated in the 2005 LRDP EIR, the certified Final EIR concluded that additional off-campus project-

specific intersection and roadway segments analyses and on-campus vehicle operations analysis would not be necessary. As such, the Original Project was found to not degrade the level of service (LOS) standards, travel demand measures, or conflict with the Santa Cruz Regional Transportation Plan.

Table 7 Campus Vehicle Gateway Trip Generation Estimates

Scenario	Daily Vehicle Trips
1. Existing (2017) Conditions	22,764
2. Daily Vehicle Trips with Original Project	22,702
3. Daily Vehicle Trips with Modified Project	22,562
Daily Trip Change due to Modified Project	-140
4. Cumulative (2023) Daily Trips with Original Project	25,518
5. Cumulative (2023) Daily Trips with Modified Project	25,378
Cumulative Daily Trip Change due to Modified Project	-140

Source: Appendix B

As shown in Table 7, under the Modified Project, trip generation would be further reduced. The Modified Project would reduce campus-wide daily trips by 140 compared to the Original Project, including reductions in trips occurring during the AM and PM peak hours. As discussed in Appendix B, the Modified Project would reduce campus-wide daily trips by 21 percent compared to the 2005 LRDP. The reduction in trip generation would be attributed to an increase of up to 450 additional on-campus beds, which when added to the 565 beds included in the Original Project would result in 1,015 beds for existing students. Locating more students on campus results in fewer vehicles trips to and from campus because parking permit eligibility is restricted for first- and second-year undergraduates. Furthermore, these students do not have to drive from more distant off campus residences to attend class, and can instead use alternative transportation modes, such as walking, bicycling, or transit. Therefore, the Modified Project would not degrade level of service standards, travel demand measures, or conflict with the Santa Cruz Regional Transportation Plan (Appendix B).

As described on pages 4.15-23 through 4.15-24 of the certified Final EIR, the Original Project would not conflict with policies, plans, or programs supporting alternative transportation including public transit, bicycling, and pedestrians. The Original Project would involve improvements to the North Bridge pedestrian connection to the main campus, new pedestrian pathways throughout Kresge College, and accessibility improvements in line with Americans with Disabilities Act standards which would encourage pedestrian access throughout the Kresge College complex. The Modified Project would be located on the same site as the Original Project and does not include changes in land use or circulation that would negatively affect transit, roadway, bicycle, or pedestrian facilities. Aside from the construction activities to provide the additional beds, the Modified Project would be built as detailed in the certified Final EIR, including North Bridge pedestrian improvements, pedestrian pathways, and bicycle routes. The Modified Project would additionally improve exterior walkways as described in Section 2, *Project Description*, which would be consistent with alternative transportation initiatives within UC Santa Cruz. Similar to the Original Project, existing transit service near the project site would be able to accommodate additional transit trips generated by the Modified Project.

For all the reasons discussed above, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to conflicts with a program, plan, ordinance, or policy addressing the circulation system.

b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

CEQA Guidelines Section 15064.3, subdivision (b), which was added to the CEQA Guidelines as part of the update adopted by the State in December 2018, defines acceptable criteria for analyzing transportation impacts under CEQA by requiring analysis of impacts related to Vehicle Miles Traveled (VMT), not LOS. Because an analysis of VMT was added to the CEQA Guidelines following certification of the Final EIR, an analysis considering the proposed project's impacts to VMT was not required. However, VMT does not constitute new information requiring a revision to previous CEQA analysis or a subsequent or supplemental EIR, because analysis based on VMT metrics was available prior to the certification of the Final EIR (for example, VMT is routinely used to calculate impacts related to air quality and greenhouse gas emissions). Moreover, an analysis of VMT impacts is provided in this Addendum in order to determine if the project would result in new significant impacts or substantial increase in the severity of significant impacts identified in the certified Final EIR.

Land use projects with VMT exceeding an applicable threshold of significance may indicate a significant impact, and projects that decrease VMT compared to existing conditions should be presumed to have a less than significant transportation impact. While the certified Final EIR did not include a VMT analysis, both the Original Project and the Modified Project provides an increased number of beds within Kresge College. This would constitute infill development that would generally reduce VMT compared to greenfield development (new development on lands not previously planned for development).

According to Section 15064.3(b) of the CEQA Guidelines, generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact. Section 21064.3 of the Public Resources Code defines a major transit stop as an existing rail or bus rapid transit station; a ferry terminal served by either a bus or rail transit service; or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during peak commute periods. Section 21155 of the Public Resources Code defines a high-quality transit corridor as a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute periods. UC Santa Cruz operates fixed route campus transit shuttle services that have at least one stop within 0.5 mile of the Kresge College complex and have a service interval of between 10 and 20 minutes during peak commute hours. Because the UC Santa Cruz transit shuttle service includes two routes with northbound and southbound stops at Kresge College complex, and each route has a service interval of 10 to 20 minutes, when considered together, these two routes ensure that transit stops at the Kresge College complex at least every 15 minutes during the peak commute periods. Santa Cruz Metro Transit District (METRO) serves the same Kresge College complex bus stops with two routes with 30 minute, and four routes with 60-minute service intervals, providing additional 15-minute service levels. Combined, the campus shuttle and METRO bus services provide an average service frequency of seven-and-a-half-minutes during the peak commute periods. Accordingly, the project site is within one half mile of a high-quality transit corridor. Pursuant to Section 15064.3(b), impacts of the Modified Project on transportation are presumed to be less than significant and there is no known information to rebut or overcome that presumption. Accordingly,

the Modified Project would not result in any new significant impact or a substantial increase in the severity of a previously identified significant impact to transportation.

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?

The Modified Project would be carried out on the same site as the Original Project. As described on page 4.15-18 of the certified Final EIR, the Original Project would not include roadway design features that could result in a safety hazard. The Original Project would maintain existing circulation routes and would not result in the use of vehicles that could cause a safety hazard due to incompatibility with on-road traffic. The Original Project would improve pedestrian circulation by, for example, introducing an additional pedestrian deck on the North Bridge that would maintain accessibility to and from Kresge College. Because the Modified Project would focus on improvements to facilitate more student beds within Kresge College, the Modified Project would not introduce roadway design features that could result in a safety hazard, alter existing circulation patterns, or result in the use of vehicles that could cause a safety hazard due to incompatibility with on-road traffic. In addition, like the Original Project, the Modified Project would be required to comply with applicable codes and regulations that govern traffic-related design features and uses, driveways, and site access, as well as comply with the 2005 LRDP and the UC Santa Cruz Campus Standards Handbook. Therefore, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to safety risks pertaining to hazardous design features or incompatible uses.

d. Would the project result in inadequate emergency access?

Construction

Construction of the Modified Project would be carried out on the same project site as the Original Project. As described on page 4.15-18 through 4.15-23 of the certified Final EIR, construction traffic associated with the Original Project would cause an increase in daily and peak hour trips to campus; however, the total daily and peak hour traffic at the campus gateways would be less than the traffic analyzed in the 2005 LRDP EIR and the impacts would be less than significant after project-specific Mitigation Measure T-3 is imposed. See pages 4.15-22 and 4.15-23 of the certified Final EIR.

Like the Original Project, construction of the Modified Project could additionally require temporary closure of traffic lanes or roadway segments on campus which could result in traffic congestion and potential impacts to emergency vehicle access near the project site. Pedestrian, bicycle, and transit facilities along Porter-Kresge Road adjacent to the project site are expected to stay open during construction; however, on-site sidewalks, bicycle paths, and shuttle stops may be moved or temporarily closed to accommodate construction activities which could impact pedestrian circulation. Implementation of certified Final EIR Mitigation Measure T-3 included in the certified Final EIR, which requires implementation of a Construction Traffic Management Plan to reduce impacts associated with temporary delays that could be experienced by emergency access vehicles, would also be required for the Modified Project in order to minimize traffic impacts to campus. The Modified Project would result in similar types and intensities of construction activities as the Original Project, and the same mitigation measure would mitigate the Modified Project impacts.

Operation

As described on page 4.15-18 of the certified Final EIR, vehicle trips generated from project construction could affect emergency access, but the certified Final EIR identified or discussed no impacts on emergency access resulting from operation of the Original Project. Nonetheless, trip generation amounts for the Modified Project were analyzed in terms of gateway trips, which are primarily influenced by the campus population and the number of beds on campus. The Modified Project would introduce up to an additional 450 students living on the project site for a total net increase of 650 students when considering the student beds provided by the Original Project. Because additional students would reside on campus, fewer would commute to campus from elsewhere. As such, the Modified Project would reduce campus-wide trips by 0.9 percent compared to the Original Project and by 21 percent compared to the 2005 LRDP (Appendix B). The reduction in trip generation would improve emergency access due to fewer cars and chances for vehicular congestion which could impede emergency access.

Overall, as described above, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to inadequate emergency. Because the Modified Project would have no new significant impacts or increase severity of significant impacts previously identified in the certified Final EIR, it would also have no new significant cumulative impacts.

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3.18 Tribal Cultural Resources

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code Section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:					
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?	Less than Significant Impact, Pages 4.16-4 through 4.16-5	No	No	No	Yes
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	Less than Significant Impact, Pages 4.16-4 through 4.16-5	No	No	No	Yes

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code Section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?

b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code

Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

As discussed on pages 4.16-4 through 4.16-6 of the certified Final EIR, the tribal consultation process that was conducted in accordance with AB 52 for the Original Project did not identify tribal cultural resources on the project site. The area of disturbance for Original Project was not known or expected to contain any tribal cultural resources that would qualify as a historical resource or a unique cultural resource as defined in Public Resource Code Section 5020.1(k) or a resource determined by the lead agency to be significant pursuant to criteria set forth in Public Resource Code Section 5024.1(c). As the Modified Project would take place on the same project site as the Original Project, ground disturbing activities related to both the Modified Project and Original Project would not be expected to uncover any significant tribal cultural resources. However, mitigation would be required in the event of unanticipated discovery of tribal cultural resources. certified Final EIR Mitigation Measure TCR-1 (see page 4.16-5 of the certified Final EIR) establishes a stop work and mitigation procedure in the event that cultural resources of Native American origin are identified during construction. Adherence to this mitigation measure would reduce impacts to less than significant. Because the Modified Project would be carried out on the same site as the Original Project and would also incorporate certified Final EIR Mitigation Measure TCR-1, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact on tribal cultural resources.

3.19 Utilities and Service Systems

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	Less than Significant Impact, Pages 4.17-13 through 4.17-15	No	No	No	No Mitigation Was Necessary
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	Less than Significant Impact, Pages 4.17-16 through 4.17-17	No	No	No	No Mitigation Was Necessary
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	Less than Significant Impact, Pages 4.17-13 through 4.17-14	No	No	No	No Mitigation Was Necessary
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	Less than Significant Impact, Pages 4.17-17 through 4.17-18	No	No	No	No Mitigation Was Necessary
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	Less than Significant Impact, Pages 4.17-	No	No	No	No Mitigation Was Necessary

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
	17 through 4.17-18				

a. Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

c. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Because the Modified Project would occur at the existing Kresge College and mostly involve renovation, reconstruction and new building construction, utilities such as electricity, natural gas, and telecommunication facilities are already present. Therefore, this analysis focuses on wastewater and stormwater management. These utilities are also already present; however, the additional beds included in the Modified Project would result in demand that could affect the capacity of these utilities. The following analysis focuses on whether wastewater treatment facilities or storm water drainage facilities would be expanded and result in impacts due to the Modified Project.

Wastewater

As described on page 4.17-14 of the certified Final EIR, wastewater generation typically reflects a percentage of initial water demand. As discussed in Section 4.17.1(a) of the certified Final EIR, water demand on the UC Santa Cruz campus totaled about 161 million gallons in 2016, or approximately 441,000 gallons per day (gpd). Assuming a 90 percent wastewater generation factor, the campus produced approximately 396,900 gallons of wastewater per day in 2016. The estimated wastewater generation of 396,900 gallons per day represented approximately 5.7 percent of the WWTF's remaining capacity when the certified Final EIR was prepared (UC Santa Cruz 2018a).

According to a study prepared for the Original Project and used to inform the certified Final EIR, one student bed generates approximately 17 gallons per day of water demand (West Yost Associates 2018a, 2018b). Using a water use factor of 17 gpd per bed, the Original Project would generate a net new water demand of 3,400 gpd for 200 beds. The academic component of the Original Project would generate an additional 1,080 gpd, for a total of 4,480 gpd. The Modified Project would add up to an additional 450 beds for a net total of up to 650 beds, which would generate a water demand of 11,050 gpd. When combined with the additional 1,080 gpd from academic components, total water demand of the Modified Project would be approximately 12,130 gpd, or approximately 7,650 gpd more than was calculated for the Original Project in the certified Final EIR. Applying the 90 percent wastewater generation rate to 12,130 gpd results in approximately 10,917 gpd of wastewater generated from the up to 650 beds and academic component under the Modified Project.

Wastewater is treated at the City of Santa Cruz Wastewater Treatment Facility (WWTF). The City's WWTF has an unused but permitted treatment capacity of approximately 7.0 MGD during dry weather and approximately 50.4 MGD during peak wet weather conditions.[5] The proposed project would therefore account for approximately 0.16 percent of the 7.0 MGD remaining dry weather capacity and approximately 0.02 percent of the WWTF's 50.4 MGD remaining wet weather capacity. The existing treatment capacity of the WWTF would be sufficient to accommodate the Modified Project, and construction of a new or expanded WWTF would not be required for the Modified Project.

Stormwater Drainage

As discussed on page 4.17-15 of the certified Final EIR, the Original Project could alter stormwater drainage related to surface water runoff from paved areas and other impervious surfaces such as buildings. The Original Project includes a stormwater management system that would promote infiltration on the project site via bioretention areas, two sub-surface tanks (one for retention and one for reuse) that would allow for stormwater to be stored and reused. Existing surface runnels would also facilitate stormwater drainage. Construction and operation of the stormwater management devices are part of the Original Project; the impacts associated with the stormwater drainage facilities were analyzed in the certified Final EIR. It was determined that the stormwater drainage facilities would sufficiently serve the Original Project's needs.

The Modified Project includes renovation, reconstruction, and new building construction within the existing project site. A newly constructed building (Kresge L) and the town hall in the south end of the project site would result in a larger footprint and would increase impervious surfaces by approximately 47,570 square feet, an increase of approximately 27 percent compared to the Original Project. The additional surface runoff associated with Modified Project operation would be handled by the infrastructure proposed under the Original Project discussed on pages 4.10-13 and 4.10-14 of the certified Final EIR, as well as an additional sub-surface retention tank and additional associated stormwater management features similar to the Original Project. As described above in Section 3.10, *Hydrology and Water Quality*, the project would continue to be required to comply with the UC Santa Cruz Storm Water Management Plan and the SWRCB Phase II MS4 requirements intended to regulate stormwater discharges.

Therefore, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to the provisions or utilities and wastewater treatment.

b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

As discussed on page 4.17-16 of the certified Final EIR, the Original Project would include new water connections to the existing supply distribution system.

As described on page 4.17-16 of the certified Final EIR, up to 200 new student beds included in the Original Project were assumed to generate demand of 17 gallons per day (gpd) per bed, for a total of approximately 3,400 gpd. The academic component of the Original Project would generate an additional 1,080 gpd, for a total of 4,480 gpd. The Modified Project includes up to an additional 450 beds, which would generate a potable water demand of approximately 7,650 gpd. When combined

[5] Based on a maximum daily flow in 2019 of 30.6 MGD (City of Santa Cruz 2019).

with the demand of the Original Project, the total water demand of the Modified Project would be 12,130 gpd.

As described in the City of Santa Cruz's 2020 UWMP, the City projects having sufficient water supply available in normal years and single dry years to serve anticipated demand through 2045 (City of Santa Cruz 2021). Under multi-year drought conditions in the near term (2025), water supply would meet projected demand in years one through four of the multi-year drought scenario but would fall short of demand in year five. Because UC Santa Cruz is a City water customer, it is subject to the City's water supply allocation system and demand reduction requirements during drought years. UC Santa Cruz has been successful in reducing water use in recent years in response to drought conditions, meeting a 36 percent reduction from per capita potable water use in 2019, and is implementing its Water Action Plan to further reduce potable water use (UC Santa Cruz 2021e; UC Santa Cruz 2017).

According to the City's 2020 UWMP, total water demand generated on the main campus of UC Santa Cruz will be approximately 10 million gallons per year (MGY) in 2025 and as much as 26 MGY in 2045 (City of Santa Cruz 2021). The future water demand presented in the 2020 UWMP is based on the growth anticipated in the newly developed 2021 UC Santa Cruz Long Range Development Plan. However, the number of beds provided by the Modified Project would serve existing enrollment and would be well below the enrollment envisioned in the new 2021 LRDP, which is what the City's 2021 UWMP is based on. Thus, similar to the Original Project, the Modified Project's water demand would represent a small portion of the total UC Santa Cruz water demand and would not independently require the acquisition of new or expanded entitlements. Additionally, UC Santa Cruz has successfully met the City's mandatory water reduction goals in recent drought years and continues to implement water demand reduction measures such as the stormwater collection and re-use system proposed as part of the Original Project.

Based on UC Santa Cruz's demonstrated ability to meet water reduction goals during drought years and with implementation of the water conservation measures as part of the Modified Project and described in UC Santa Cruz's Water Action Plan and the Campus Sustainability Plan, existing water supply would sufficiently serve the Modified Project (UC Santa Cruz 2017; UC Santa Cruz 2019b). The Original Project and the Modified Project includes installation of purple pipe, which would allow the reuse of stormwater runoff on-site for non-potable uses, such as toilet flushing. Therefore, the purple pipe system would reduce overall demand for water at the project site. In addition, the Modified Project would implement relevant 2005 LRDP EIR mitigation measures as necessary such as Mitigation Measure UTIL-9A, UTIL-9C, UTIL-9D, and UTIL-9I which would require the campus to implement water conservation strategies to reduce indoor and outdoor water demand and drought-contingent water reduction measures. Therefore, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to water supply.

d. Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

As discussed on page 4.17-17 of the certified Final EIR, solid waste generated by the Original Project would be brought to the City of Santa Cruz Resource Recovery Facility, which has a maximum daily permitted throughput capacity of 535 tons per day (California Department of Resources Recycling

and Recovery [CalRecycle] 2022). The UC Santa Cruz Grounds Services Department is responsible for overseeing the sorting and disposal of over 90 percent of waste generated on the campus. In 2019, UC Santa Cruz's diversion of solid waste from landfills was 51 percent (UC Santa Cruz 2022).

Increased solid waste generation is linked to an increased student population. As discussed in Section 2, *Project Description*, the Modified Project would not increase student enrollment at UC Santa Cruz. However, because the additional beds would place students on campus, to conservatively estimate solid waste generation, it is assumed that the Modified Project would introduce up to 450 people, or a 2 percent increase campus-wide.[6] This additional population would generate approximately 2 percent more solid waste for disposal at landfills. Based on the existing solid waste generation rate used in the certified Final EIR of 5.01 tons per day for the UC Santa Cruz campus, the Modified Project would generate an estimated 0.1 additional tons per day compared to an estimated 0.05 additional tons per day generated under the Original Project. Table 8 presents the findings of this analysis which show an indiscernible increase in solid waste generation on campus as a result of the Modified Project.

Table 8 Solid Waste Generation from Added Campus Population

	Daily Solid Waste Generation (tons)			Remaining Daily Capacity at Santa Cruz RRF (tons)	Percent of Remaining Capacity Used
	Existing UC Santa Cruz Campus	Proposed Project[1]	Total (Existing + Proposed Project)		
Original Project	5.01	<0.05	5.06	535	0.94%
Modified Project	5.01	0.1	5.11	535	0.95%

Source: CalRecycle 2022, UC Santa Cruz 2018b

[1] Conservatively assumes that the project introduces up to 450 new students or faculty/staff on campus.

Solid waste generated as a result of the Modified Project would not exceed the remaining daily capacity of the Santa Cruz Resource Recovery Facility. Accordingly, the Modified Project would not generate substantially increased amounts of solid waste compared to the Original Project. The Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact on solid waste.

[6] 19,161 students + 3,411 employees = 22,572 students, faculty, and staff on the UC Santa Cruz campus (UC Santa Cruz 2020).

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3.20 Wildfire

	What was the Impact and Where was the Impact Analyzed in the Certified EIR?	Do Proposed Changes Require Major Revisions to the Certified EIR?	Do New Circumstances Require Major Revisions to the Certified EIR?	Is There Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do Certified EIR Mitigation Measures Address and/or Resolve Impacts?
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:					
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	Less than Significant Impact, Page 4.9-15	No	No	No	Yes
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	N/A	No	No	No	Yes
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	N/A	No	No	No	Yes
d. Expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	N/A	No	No	No	Yes

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

a. Substantially impair an adopted emergency response plan or emergency evacuation plan?

This impact was not explicitly addressed in the certified Final EIR because it was not included in the *CEQA Guidelines* in effect at the time, although Section 4.9, *Hazards and Hazardous Materials*, of

the certified Final EIR does discuss similar emergency evacuation plans and wildfire issues. This Addendum provides an analysis of project effects due to wildfire.

The project site is in an urban, un-zoned area within a Local Responsibility Area designated by the California Department of Forestry and Fire Protection (CAL FIRE 2007a). The project site is located less than 500 feet east of land designated as a Moderate Fire Hazard Severity Zone within the Local Responsibility Area and approximately 0.4 mile south of land designated as a High Fire Hazard Severity Zone in a State Responsibility Area (CAL FIRE 2007a; CAL FIRE 2007b; UC Santa Cruz 2021).

As described on page 4.9-15 of the certified Final EIR, the Original Project construction would not interfere with the UC Santa Cruz Emergency Operations Plan (EOP) through construction-related road closures. As the Modified Project would result in a similar amount of construction and would not require a significant increase in number of construction vehicles, the Modified Project would not create congestion levels or road closures which would interfere with the EOP. Adherence to 2005 LRDP EIR Mitigation Measure HAZ-9A focused on coordinating construction work with campus traffic controls would further ensure that construction would not result in significant impacts.

The Original Project and the Modified Project would not impair implementation of or physically interfere with the EOP during operation. As the Modified Project would not affect vehicular and pedestrian circulation to and around the project site, impacts would be similar to that under the Original Project. Therefore, operation of the Modified Project would not impair implementation of or physically interfere with the EOP. The impacts of the Modified Project would be less than significant. The Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to substantially impairing an emergency response or.

b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

d. Expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

The Modified Project would be built on the same project site as the Original Project, which is already developed. As discussed on page 4.9-16 of the certified Final EIR, areas surrounding the UC Santa Cruz campus are prone to wildfires due to the accumulation of vegetation, steep and dry slopes, and the presence of vulnerable structures. The Modified Project would comply with California Fire Code Chapter 7A and California Residential Code Chapter R337, both of which contain standards applicable to the construction of buildings in wildfire-prone zones. The renovation of existing buildings under the Modified Project would include addressing code deficiencies and replacing or improving existing elements such as fire sprinklers, which would reduce the potential risk of exacerbating fire risk. In addition, because the Modified Project would primarily involve renovation reconstruction, and retention of existing buildings, the Modified Project would not require the installation or maintenance of significant new infrastructure as discussed under Section 3.17, *Transportation,* and Section 3.19, *Utilities and Service Systems*, and would therefore not lead to exacerbated fire risks or impacts to the environment. As discussed under Section 3.7, *Geology and Soils*, the project site is not in a landslide-prone area, and the Original Project would therefore not expose people or structures to significant risks as a result of runoff, post-fire slope instability, or

drainage changes. Similar to the Original Project, the Modified Project would be required to implement 2005 LRDP EIR Mitigation Measures HAZ-10A and HAZ-10D. These mitigation measures require the UC Santa Cruz Fire Department to regularly review campus buildings for compliance with the International Uniform Wildland Interface Code as determined by the Campus Fire Marshal. Impacts of the Modified Project would be less than significant.

For the reasons discussed above, the Modified Project would not result in any new significant impacts or a substantial increase in the severity of a previously identified significant impact related to wildfire.

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4 Conclusion

As demonstrated in the discussions above regarding the potential environmental effects of the Modified Project, substantial changes are not proposed to the Original Project that would require major revisions to the 2019 certified Final EIR prepared for the Kresge College Renewal and Expansion Project. Significant impacts beyond those identified and analyzed in the certified Final EIR would not occur as a result of the Modified Project. Overall, the Modified Project would not result in new information of substantial importance that would result in new significant impacts, more severe impacts, or require new mitigation measures compared to those identified in the certified Final EIR.

As such, the Modified Project would not result in conditions identified in *CEQA Guidelines* Section 15162 requiring supplemental environmental review or a Subsequent EIR, and these are therefore not required for the Modified Project. Again, it should be noted that the Modified Project would remain subject to all previously adopted mitigation measures included in the certified Final EIR for the Original Project. The MMRP adopted for the Original Project in March 2019 would remain applicable to the Modified Project. Based on the above analysis, this Addendum to the previously certified Final EIR for the project has been prepared in accordance with *CEQA Guidelines* Section 15164.

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5 References

5.1 Bibliography

California Department of Conservation (DOC). 2020. Santa Cruz County Important Farmland 2018. https://www.conservation.ca.gov/dlrp/fmmp/Pages/SantaCruz.aspx (accessed December 2021).

California Department of Fish and Wildlife (CDFW). 2021. California Natural Community List. Retrieved on February 11, 2022, from https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153398&inline

California Department of Forestry and Fire Protection (CAL FIRE). 2007a. Santa Cruz County Draft Fire Hazard Severity Zones in LRA. https://osfm.fire.ca.gov/media/6770/fhszl06_1_map44.pdf (accessed December 2021).

____. 2007b. Santa Cruz County Fire Hazard Severity Zones in SRA. https://osfm.fire.ca.gov/media/6768/fhszs_map44.pdf (accessed December 2021).

California Department of Resources, Recycling, and Recovery (CalRecycle). 2022. SWIS Facility/Site Activity Details: City of Santa Cruz Resource Recovery Facility (44-AA-0001). https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1394?siteID=3417 (accessed January 2022).

California Department of Transportation (Caltrans). 2022. California State Scenic Highway System Map [map database]. Retrieved on February 11, 2022, from https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways

California Department of Water Resources (DWR). 2018. Groundwater Basin Boundary Assessment Tool. https://gis.water.ca.gov/app/bbat/ (accessed January 2022).

____. 2020. Sustainable Groundwater Management Act 2019 Basin Prioritization. https://water.ca.gov/programs/groundwater-management/basin-prioritization (accessed January 2022).

California Emergency Management Agency (Cal EMA). 2009. Tsunami Inundation Map for Emergency Planning: Santa Cruz Quadrangle. https://www.conservation.ca.gov/cgs/tsunami/maps/santa-cruz (accessed January 2022).

California Energy Commission. 2018. 2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings. https://www.energy.ca.gov/sites/default/files/2021-06/CEC-400-2018-020-CMF_0.pdf (accessed November 2021).

California Department of Transportation (Caltrans). 2018. California Scenic Highway Mapping System. https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa (accessed December 2021).

Federal Emergency Management Agency (FEMA). 2012. FEMA Flood Map Service Center (Map #06087C0327E). https://msc.fema.gov/portal/home (accessed January 2022).

Fehr & Peers. 2022a. University of California Santa Cruz (UCSC) Kresge College – Trip Generation Analysis [memorandum dated January 28, 2022].

Monterey Bay Air Resources District (MBARD). 2017. 2012-2015 Air Quality Management Plan. Adopted on March 15, 2017. Retrieved on February 15, 2022, from https://www.mbard.org/files/6632732f5/2012-2015-AQMP_FINAL.pdf

National Park Service (NPS). 2021. Karst Landscapes. Last updated September 15, 2021. https://www.nps.gov/subjects/caves/karst-landscapes.htm (accessed January 2022).

Santa Cruz, City of. 2019 Wastewater Treatment Facility Annual Summary Report & Outfall Inspection Report. http://www.cityofsantacruz.com/home/showdocument?id=78881 (accessed February 2022).

_____. 2021. 2020 Urban Water Management Plan. Adopted November 2021. https://www.cityofsantacruz.com/home/showpublisheddocument/87122/637739611535800000 (accessed January 2022).

_____. 2022. Water Production. https://www.cityofsantacruz.com/government/city-departments/water/production (accessed January 2022).

Santa Cruz Mid-County Groundwater Agency. 2019. Santa Cruz Mid-County Groundwater Basin Groundwater Sustainability Plan. https://www.midcountygroundwater.org/sustainability-plan (accessed January 2022).

United States Fish and Wildlife Services (USFWS). 2021. National Wetlands Inventory Mapper. https://www.fws.gov/wetlands/data/mapper.html (accessed December 2021).

____. 2022. Information for Planning and Consultation Mapping Tool. https://ipac.ecosphere.fws.gov/ (accessed January 2022).

University of California Office of the President (UC Office of the President). 2022. Zero Waste Policy Goals. https://www.ucop.edu/sustainability/policy-areas/waste-reduction-and-recycling/index.html (accessed January 2022).

University of California, Santa Cruz (UC Santa Cruz). 2006. 2005 Long-Range Development Plan EIR. Published September 6, 2006. https://lrdp.ucsc.edu/final-eir.shtml (accessed December 2021).

____. 2010. UC Santa Cruz Campus Standards Handbook Part II: General Building Requirements. https://ppc.ucsc.edu/consultants/images/06part2.pdf (accessed January 2022).

____. 2017. Water Action Plan. https://sustainability.ucsc.edu/initiatives/water/images/water-action-plan-2017 (accessed January 2022).

____. 2018. UC Santa Cruz Campus Standards Handbook Appendix D. https://ppc.ucsc.edu/consultants/standards.html (accessed January 2022).

____. 2019a. Waste Water Discharge. https://ehs.ucsc.edu/programs/environmental/waste-water.html (accessed January 2022).

____. 2019b. 2017-2022 Campus Sustainability Plan. Last updated 2019. https://sustainabilityplan.ucsc.edu/ (accessed January 2022).

____. 2020. UC Santa Cruz Facts & Figures. https://www.ucsc.edu/about/facts-figures.html (accessed January 2022).

____. 2021a. Long Range Development Plan. https://lrdp.ucsc.edu/2021/files/flrdp/web/UCSC-2021-LRDP-Entire-Document.pdf (accessed December 2021).

____. 2021b. Long Range Development Plan EIR. https://lrdp.ucsc.edu/2021/files/feir/as-amended/Draft%20EIR-Amended.pdf (accessed December 2021).

____. 2021c. 2021 Long Range Development Plan Land Use Map. https://lrdp.ucsc.edu/2021/files/land-use-map.pdf (accessed December 2021).

____. 2021d. Kresge College Community Expectations. https://kresge.ucsc.edu/residential-life/communityexpectations/index.html (accessed January 2022).

____. 2021. UC Santa Cruz Sustainability Office Water Initiatives. https://sustainability.ucsc.edu/initiatives/water/index.html (accessed January 2022).

____. 2022. UC Santa Cruz Sustainability Office Zero Waste Initiative. https://sustainability.ucsc.edu/initiatives/zero-waste/index.html (accessed January 2022).

West Yost Associates (WYA). 2018a. Water Supply Evaluation for University of Santa Cruz 2005 Long Range Development Plan. Prepared for UC Santa Cruz. Santa Cruz, CA. March 2018.

_____. 2018b. Revised Potable and Recycled Water Demand Estimates for the University of California Santa Cruz (UCSC) Student Housing West Project and the 2005 Long Range Development Plan (2005 LRDP). Prepared for UC Santa Cruz. Santa Cruz, CA. August, 2018.

Yamauchi-Gleason, Michael. 2019. Project update for the Kresge community. https://kresgeproject.ucsc.edu/news/kresge-update-nov-26.html (accessed December 2021).

____. 2020a. Kresge renewal in full swing. https://kresgeproject.ucsc.edu/news/kresge-january-update.html (accessed December 2021).

____. 2020b. Rerouting electrical, fire alarm systems at Town Hall complex. https://kresgeproject.ucsc.edu/news/kresge-update-february-14.html (accessed December 2021).

____. 2020c. Kresge Update – March 26, 2020. https://kresgeproject.ucsc.edu/news/kresge-update-march-26.html (accessed December 2021).

5.2 List of Preparers

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Appendix A

California Emissions Estimator Model Inputs and Outputs

UCSC Kresge EIR Addendum - Santa Cruz County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

UCSC Kresge EIR Addendum

Santa Cruz County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Library	8.90	1000sqft	0.00	8,900.00	0
Apartments Mid Rise	1,015.00	Dwelling Unit	8.00	126,000.00	1015

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	1.8	**Precipitation Freq (Days)**	61
Climate Zone	5			**Operational Year**	2025
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Library land uses accounts for academic, student support, and town hall uses (8,900sf). The apartment mid-rise are account for all beds and the square footage for apartments + cafe (46,000+80,000 sf)

Construction Phase - Applicant provided schedule. This is a two phased construction (Phase I and Phase II) on a 6 day/week schedule

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Default equipment for all phases

Off-road Equipment -

Off-road Equipment -

UCSC Kresge EIR Addendum - Santa Cruz County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Demolition waste equals 3,182 cubic yards . Split the waste removal with same percentage as building demo (Phase I=70% and Phase II= 30%). Phase I = 2,227 cy and Phase II = 955 cy. Added on top of building demo haul trips

Demolition - Building Square footage to be demolished = 51,670 sf . Split the total similar to the original EIR with 70% in Phase I and 30% in Phase II.

Grading - There would no net export of soil from the University instead of exporting the University will use soil for on-campus purposes.

Architectural Coating - Pursuant with MBARD Rule 476, the architectural coating rate would be 50 g/L

Vehicle Trips - Cumulative Conditions with Kresge College scenario = 25,378 trips. Modified trip gen rates using the daily trips, assuming trips would be similar for University/College ITE where there are only weekday and sat trips.

Woodstoves - No woodstoves or hearths in proposed residences

Area Coating - Pursuant with MBARD Rule 476, the architectural coating rate would be 50 g/L

Water And Wastewater - Water and wastewater is treated at the City of Santa Cruz Public Works Wastewater System, 100% aerobic https://www.cityofsantacruz.com/government/city-departments/public-works/wastewater-treatment-facility

Solid Waste - Campus Net 0 Waste by 2020 - 90% reduction. Reduced the default tons/year estimate by 90%

Construction Off-road Equipment Mitigation - 205 LRDP MM AIR-1. Soil Stabilizer, clean road, and ground cover

Area Mitigation -

Energy Mitigation - Exceed the Title 24 standards by 20%

Water Mitigation - 20% indoor water reduction pursuant with CalGreen

Energy Use - Natural gas zeroed to account for UCSC energy policies

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	50
tblAreaCoating	Area_EF_Nonresidential_Interior	150	50
tblAreaCoating	Area_EF_Residential_Exterior	100	50
tblAreaCoating	Area_EF_Residential_Interior	100	50
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	91
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	626.00
tblConstructionPhase	NumDays	20.00	210.00
tblConstructionPhase	NumDays	230.00	784.00
tblConstructionPhase	NumDays	230.00	886.00
tblConstructionPhase	NumDays	20.00	157.00
tblConstructionPhase	NumDays	20.00	129.00
tblConstructionPhase	NumDays	20.00	209.00
tblConstructionPhase	NumDays	20.00	155.00
tblConstructionPhase	NumDays	20.00	131.00
tblConstructionPhase	NumDays	20.00	53.00
tblConstructionPhase	NumDays	10.00	130.00
tblConstructionPhase	NumDays	10.00	129.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblEnergyUse	NT24NG	2,615.00	0.00
tblEnergyUse	NT24NG	6.90	0.00
tblEnergyUse	T24NG	5,828.01	0.00
tblEnergyUse	T24NG	17.67	0.00
tblFireplaces	NumberGas	1,015.00	0.00
tblLandUse	LandUseSquareFeet	1,015,000.00	126,000.00
tblLandUse	LotAcreage	0.20	0.00
tblLandUse	LotAcreage	26.71	8.00
tblLandUse	Population	2,903.00	1,015.00
tblTripsAndVMT	HaulingTripNumber	165.00	443.00
tblTripsAndVMT	HaulingTripNumber	71.00	190.00
tblVehicleTrips	ST_TR	4.91	1.10
tblVehicleTrips	ST_TR	80.09	0.00
tblVehicleTrips	SU_TR	4.09	0.00
tblVehicleTrips	SU_TR	42.09	0.00
tblVehicleTrips	WD_TR	5.44	1.10
tblVehicleTrips	WD_TR	72.05	0.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.2578	2.6411	1.4961	2.6900e-003	0.5922	0.1337	0.7260	0.2735	0.1238	0.3972	0.0000	241.6144	241.6144	0.0668	1.6500e-003	243.7750
2020	1.3756	10.4632	10.2596	0.0221	2.5196	0.4741	2.9937	1.0161	0.4409	1.4570	0.0000	2,002.0725	2,002.0725	0.2930	0.0865	2,035.1836
2021	0.8132	4.6470	6.9264	0.0168	1.0233	0.1778	1.2011	0.2748	0.1674	0.4421	0.0000	1,543.3411	1,543.3411	0.1303	0.0882	1,572.8734
2022	1.2271	4.5826	7.2939	0.0177	1.0639	0.1742	1.2381	0.2852	0.1639	0.4491	0.0000	1,618.6674	1,618.6674	0.1508	0.0809	1,646.5506
2023	1.0910	7.4398	8.8611	0.0212	2.7655	0.2989	3.0644	1.1709	0.2779	1.4488	0.0000	1,921.7007	1,921.7007	0.2886	0.0702	1,949.8220
2024	0.9332	3.7031	6.7816	0.0179	1.2093	0.1188	1.3281	0.3243	0.1123	0.4365	0.0000	1,652.4784	1,652.4784	0.1256	0.0821	1,680.0796
2025	0.6508	2.8617	5.2862	0.0132	0.8088	0.0959	0.9047	0.2169	0.0899	0.3068	0.0000	1,214.4110	1,214.4110	0.1235	0.0526	1,233.1664
Maximum	**1.3756**	**10.4632**	**10.2596**	**0.0221**	**2.7655**	**0.4741**	**3.0644**	**1.1709**	**0.4409**	**1.4570**	**0.0000**	**2,002.0725**	**2,002.0725**	**0.2930**	**0.0882**	**2,035.1836**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.2578	2.6411	1.4961	2.6900e-003	0.2512	0.1337	0.3849	0.1226	0.1238	0.2464	0.0000	241.6141	241.6141	0.0668	1.6500e-003	243.7748
2020	1.3756	10.4631	10.2596	0.0221	0.8862	0.4741	1.3603	0.4173	0.4409	0.8582	0.0000	2,002.0714	2,002.0714	0.2930	0.0865	2,035.1826
2021	0.8132	4.6470	6.9264	0.0168	0.2348	0.1778	0.4125	0.0812	0.1674	0.2486	0.0000	1,543.3406	1,543.3406	0.1303	0.0882	1,572.8730
2022	1.2271	4.5826	7.2939	0.0177	0.2424	0.1742	0.4166	0.0836	0.1639	0.2476	0.0000	1,618.6669	1,618.6669	0.1508	0.0809	1,646.5501
2023	1.0910	7.4398	8.8611	0.0212	0.9943	0.2989	1.2932	0.4874	0.2779	0.7653	0.0000	1,921.6996	1,921.6996	0.2886	0.0702	1,949.8209
2024	0.9332	3.7031	6.7816	0.0179	0.2746	0.1188	0.3934	0.0948	0.1123	0.2071	0.0000	1,652.4780	1,652.4780	0.1256	0.0821	1,680.0791
2025	0.6508	2.8617	5.2862	0.0132	0.1835	0.0959	0.2794	0.0634	0.0899	0.1533	0.0000	1,214.4106	1,214.4106	0.1235	0.0526	1,233.1659
Maximum	**1.3756**	**10.4631**	**10.2596**	**0.0221**	**0.9943**	**0.4741**	**1.3603**	**0.4874**	**0.4409**	**0.8582**	**0.0000**	**2,002.0714**	**2,002.0714**	**0.2930**	**0.0882**	**2,035.1826**

	ROG	NOx	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**	**69.28**	**0.00**	**60.37**	**62.09**	**0.00**	**44.78**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**10-1-2019**	**12-31-2019**	2.9044	2.9044
2	**1-1-2020**	**3-31-2020**	5.4204	5.4204
3	**4-1-2020**	**6-30-2020**	2.6057	2.6057
4	**7-1-2020**	**9-30-2020**	2.2624	2.2624

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5	**10-1-2020**	**12-31-2020**	1.5444	1.5444
6	**1-1-2021**	**3-31-2021**	1.3675	1.3675
7	**4-1-2021**	**6-30-2021**	1.3375	1.3375
8	**7-1-2021**	**9-30-2021**	1.3522	1.3522
9	**10-1-2021**	**12-31-2021**	1.3979	1.3979
10	**1-1-2022**	**3-31-2022**	1.2086	1.2086
11	**4-1-2022**	**6-30-2022**	1.3515	1.3515
12	**7-1-2022**	**9-30-2022**	1.4507	1.4507
13	**10-1-2022**	**12-31-2022**	1.7861	1.7861
14	**1-1-2023**	**3-31-2023**	3.2367	3.2367
15	**4-1-2023**	**6-30-2023**	2.9327	2.9327
16	**7-1-2023**	**9-30-2023**	1.1195	1.1195
17	**10-1-2023**	**12-31-2023**	1.2581	1.2581
18	**1-1-2024**	**3-31-2024**	1.1718	1.1718
19	**4-1-2024**	**6-30-2024**	1.1338	1.1338
20	**7-1-2024**	**9-30-2024**	1.1463	1.1463
21	**10-1-2024**	**12-31-2024**	1.1847	1.1847
22	**1-1-2025**	**3-31-2025**	1.0888	1.0888
23	**4-1-2025**	**6-30-2025**	1.4386	1.4386
24	**7-1-2025**	**9-30-2025**	0.9802	0.9802
		Highest	5.4204	5.4204

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.8823	0.1205	10.4575	5.5000e-004		0.0580	0.0580		0.0580	0.0580	0.0000	17.0985	17.0985	0.0164	0.0000	17.5078
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	371.0937	371.0937	0.0600	7.2800e-003	374.7631
Mobile	0.6149	0.7172	5.6387	9.7200e-003	1.0186	8.8800e-003	1.0275	0.2723	8.2900e-003	0.2805	0.0000	921.1539	921.1539	0.0780	0.0462	936.8797
Waste						0.0000	0.0000		0.0000	0.0000	96.4410	0.0000	96.4410	5.6995	0.0000	238.9285
Water						0.0000	0.0000		0.0000	0.0000	23.4959	46.8900	70.3858	0.0885	0.0520	88.0978
Total	**1.4972**	**0.8377**	**16.0962**	**0.0103**	**1.0186**	**0.0669**	**1.0855**	**0.2723**	**0.0663**	**0.3386**	**119.9369**	**1,356.2360**	**1,476.1729**	**5.9424**	**0.1055**	**1,656.1770**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.8823	0.1205	10.4575	5.5000e-004		0.0580	0.0580		0.0580	0.0580	0.0000	17.0985	17.0985	0.0164	0.0000	17.5078
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	369.2098	369.2098	0.0597	7.2400e-003	372.8606
Mobile	0.6149	0.7172	5.6387	9.7200e-003	1.0186	8.8800e-003	1.0275	0.2723	8.2900e-003	0.2805	0.0000	921.1539	921.1539	0.0780	0.0462	936.8797
Waste						0.0000	0.0000		0.0000	0.0000	96.4410	0.0000	96.4410	5.6995	0.0000	238.9285
Water						0.0000	0.0000		0.0000	0.0000	18.7967	40.2404	59.0371	0.0712	0.0417	73.2337
Total	**1.4972**	**0.8377**	**16.0962**	**0.0103**	**1.0186**	**0.0669**	**1.0855**	**0.2723**	**0.0663**	**0.3386**	**115.2377**	**1,347.7026**	**1,462.9403**	**5.9249**	**0.0951**	**1,639.4103**

	ROG	NOx	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**	**3.92**	**0.63**	**0.90**	**0.30**	**9.85**	**1.01**

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 Phase I	Demolition	10/1/2019	3/31/2020	6	157	
2	Site Preparation Phase I	Site Preparation	11/1/2019	3/31/2020	6	130	
3	Grading Phase I	Grading	1/1/2020	8/31/2020	6	209	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Building Construction Phase I	Building Construction	2/1/2020	11/30/2022	6	886	
5	Architectural Coating Phase I	Architectural Coating	5/1/2022	12/31/2022	6	210	
6	Paving Phase I	Paving	11/1/2022	12/31/2022	6	53	
7	Demolition Phase II	Demolition	12/1/2022	4/30/2023	6	129	
8	Site Preparation Phase II	Site Preparation	1/1/2023	5/31/2023	6	129	
9	Grading Phase II	Grading	1/1/2023	6/30/2023	6	155	
10	Building Construction Phase II	Building Construction	3/1/2023	8/31/2025	6	784	
11	Architectural Coating Phase II	Architectural Coating	9/1/2023	8/31/2025	6	626	
12	Paving Phase II	Paving	4/1/2025	8/31/2025	6	131	

Acres of Grading (Site Preparation Phase): 195

Acres of Grading (Grading Phase): 209

Acres of Paving: 0

Residential Indoor: 255,150; Residential Outdoor: 85,050; Non-Residential Indoor: 13,350; Non-Residential Outdoor: 4,450; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition Phase I	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition Phase I	Excavators	3	8.00	158	0.38
Demolition Phase I	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation Phase I	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation Phase I	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading Phase I	Excavators	1	8.00	158	0.38
Grading Phase I	Graders	1	8.00	187	0.41
Grading Phase I	Rubber Tired Dozers	1	8.00	247	0.40
Grading Phase I	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction Phase I	Cranes	1	7.00	231	0.29
Building Construction Phase I	Forklifts	3	8.00	89	0.20

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction Phase I	Generator Sets	1	8.00	84	0.74
Building Construction Phase I	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction Phase I	Welders	1	8.00	46	0.45
Architectural Coating Phase I	Air Compressors	1	6.00	78	0.48
Paving Phase I	Pavers	2	8.00	130	0.42
Paving Phase I	Paving Equipment	2	8.00	132	0.36
Paving Phase I	Rollers	2	8.00	80	0.38
Demolition Phase II	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition Phase II	Excavators	3	8.00	158	0.38
Demolition Phase II	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation Phase II	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation Phase II	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading Phase II	Excavators	1	8.00	158	0.38
Grading Phase II	Graders	1	8.00	187	0.41
Grading Phase II	Rubber Tired Dozers	1	8.00	247	0.40
Grading Phase II	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction Phase II	Cranes	1	7.00	231	0.29
Building Construction Phase II	Forklifts	3	8.00	89	0.20
Building Construction Phase II	Generator Sets	1	8.00	84	0.74
Building Construction Phase II	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction Phase II	Welders	1	8.00	46	0.45
Architectural Coating Phase II	Air Compressors	1	6.00	78	0.48
Paving Phase II	Pavers	2	8.00	130	0.42
Paving Phase II	Paving Equipment	2	8.00	132	0.36
Paving Phase II	Rollers	2	8.00	80	0.38

Trips and VMT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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 Phase I	6	15.00	0.00	443.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation Phase I	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading Phase I	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction Phase I	9	735.00	110.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating Phase I	1	147.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving Phase I	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition Phase II	6	15.00	0.00	190.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation Phase II	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading Phase II	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction Phase II	9	735.00	110.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating Phase II	1	147.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving Phase II	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition Phase I - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.8500e-003	0.0000	8.8500e-003	1.3400e-003	0.0000	1.3400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1388	1.4134	0.8714	1.5300e-003		0.0709	0.0709		0.0660	0.0660	0.0000	136.7740	136.7740	0.0381	0.0000	137.7252
Total	**0.1388**	**1.4134**	**0.8714**	**1.5300e-003**	**8.8500e-003**	**0.0709**	**0.0798**	**1.3400e-003**	**0.0660**	**0.0673**	**0.0000**	**136.7740**	**136.7740**	**0.0381**	**0.0000**	**137.7252**

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	1.4100e-003	0.0381	6.1900e-003	8.0000e-005	1.8700e-003	6.0000e-004	2.4700e-003	5.1000e-004	5.8000e-004	1.0900e-003	0.0000	8.3229	8.3229	2.4000e-004	1.3200e-003	8.7216
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	2.7500e-003	2.6200e-003	0.0251	5.0000e-005	4.6900e-003	4.0000e-005	4.7300e-003	1.2500e-003	4.0000e-005	1.2800e-003	0.0000	4.2902	4.2902	2.2000e-004	1.8000e-004	4.3506
Total	**4.1600e-003**	**0.0407**	**0.0313**	**1.3000e-004**	**6.5600e-003**	**6.4000e-004**	**7.2000e-003**	**1.7600e-003**	**6.2000e-004**	**2.3700e-003**	**0.0000**	**12.6131**	**12.6131**	**4.6000e-004**	**1.5000e-003**	**13.0721**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition Phase I - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.7800e-003	0.0000	3.7800e-003	6.0000e-004	0.0000	6.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1388	1.4134	0.8714	1.5300e-003		0.0709	0.0709		0.0660	0.0660	0.0000	136.7738	136.7738	0.0381	0.0000	137.7251
Total	**0.1388**	**1.4134**	**0.8714**	**1.5300e-003**	**3.7800e-003**	**0.0709**	**0.0747**	**6.0000e-004**	**0.0660**	**0.0666**	**0.0000**	**136.7738**	**136.7738**	**0.0381**	**0.0000**	**137.7251**

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	1.4100e-003	0.0381	6.1900e-003	8.0000e-005	5.9000e-004	6.0000e-004	1.1900e-003	2.0000e-004	5.8000e-004	7.7000e-004	0.0000	8.3229	8.3229	2.4000e-004	1.3200e-003	8.7216
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	2.7500e-003	2.6200e-003	0.0251	5.0000e-005	1.0000e-003	4.0000e-005	1.0400e-003	3.4000e-004	4.0000e-005	3.8000e-004	0.0000	4.2902	4.2902	2.2000e-004	1.8000e-004	4.3506
Total	**4.1600e-003**	**0.0407**	**0.0313**	**1.3000e-004**	**1.5900e-003**	**6.4000e-004**	**2.2300e-003**	**5.4000e-004**	**6.2000e-004**	**1.1500e-003**	**0.0000**	**12.6131**	**12.6131**	**4.6000e-004**	**1.5000e-003**	**13.0721**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition Phase I - 2020

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					8.7400e-003	0.0000	8.7400e-003	1.3200e-003	0.0000	1.3200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1292	1.2948	0.8484	1.5100e-003		0.0647	0.0647		0.0601	0.0601	0.0000	132.5946	132.5946	0.0374	0.0000	133.5303
Total	**0.1292**	**1.2948**	**0.8484**	**1.5100e-003**	**8.7400e-003**	**0.0647**	**0.0734**	**1.3200e-003**	**0.0601**	**0.0615**	**0.0000**	**132.5946**	**132.5946**	**0.0374**	**0.0000**	**133.5303**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.0000e-004	0.0344	4.7500e-003	8.0000e-005	1.8500e-003	3.8000e-004	2.2200e-003	5.1000e-004	3.6000e-004	8.7000e-004	0.0000	8.0956	8.0956	2.3000e-004	1.2800e-003	8.4833
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	2.4800e-003	2.2600e-003	0.0222	4.0000e-005	4.6300e-003	4.0000e-005	4.6700e-003	1.2300e-003	3.0000e-005	1.2700e-003	0.0000	4.1248	4.1248	1.9000e-004	1.6000e-004	4.1788
Total	**3.3800e-003**	**0.0367**	**0.0270**	**1.2000e-004**	**6.4800e-003**	**4.2000e-004**	**6.8900e-003**	**1.7400e-003**	**3.9000e-004**	**2.1400e-003**	**0.0000**	**12.2205**	**12.2205**	**4.2000e-004**	**1.4400e-003**	**12.6620**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition Phase I - 2020

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					3.7400e-003	0.0000	3.7400e-003	6.0000e-004	0.0000	6.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1292	1.2948	0.8484	1.5100e-003		0.0647	0.0647		0.0601	0.0601	0.0000	132.5944	132.5944	0.0374	0.0000	133.5302
Total	**0.1292**	**1.2948**	**0.8484**	**1.5100e-003**	**3.7400e-003**	**0.0647**	**0.0684**	**6.0000e-004**	**0.0601**	**0.0607**	**0.0000**	**132.5944**	**132.5944**	**0.0374**	**0.0000**	**133.5302**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.0000e-004	0.0344	4.7500e-003	8.0000e-005	5.8000e-004	3.8000e-004	9.6000e-004	2.0000e-004	3.6000e-004	5.6000e-004	0.0000	8.0956	8.0956	2.3000e-004	1.2800e-003	8.4833
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	2.4800e-003	2.2600e-003	0.0222	4.0000e-005	9.9000e-004	4.0000e-005	1.0300e-003	3.4000e-004	3.0000e-005	3.7000e-004	0.0000	4.1248	4.1248	1.9000e-004	1.6000e-004	4.1788
Total	**3.3800e-003**	**0.0367**	**0.0270**	**1.2000e-004**	**1.5700e-003**	**4.2000e-004**	**1.9900e-003**	**5.4000e-004**	**3.9000e-004**	**9.3000e-004**	**0.0000**	**12.2205**	**12.2205**	**4.2000e-004**	**1.4400e-003**	**12.6620**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation Phase I - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5731	0.0000	0.5731	0.2694	0.0000	0.2694	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1127	1.1849	0.5736	9.9000e-004		0.0622	0.0622		0.0572	0.0572	0.0000	88.8386	88.8386	0.0281	0.0000	89.5413
Total	**0.1127**	**1.1849**	**0.5736**	**9.9000e-004**	**0.5731**	**0.0622**	**0.6353**	**0.2694**	**0.0572**	**0.3265**	**0.0000**	**88.8386**	**88.8386**	**0.0281**	**0.0000**	**89.5413**

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	2.1700e-003	2.0700e-003	0.0198	4.0000e-005	3.7000e-003	3.0000e-005	3.7400e-003	9.9000e-004	3.0000e-005	1.0100e-003	0.0000	3.3887	3.3887	1.7000e-004	1.5000e-004	3.4364
Total	**2.1700e-003**	**2.0700e-003**	**0.0198**	**4.0000e-005**	**3.7000e-003**	**3.0000e-005**	**3.7400e-003**	**9.9000e-004**	**3.0000e-005**	**1.0100e-003**	**0.0000**	**3.3887**	**3.3887**	**1.7000e-004**	**1.5000e-004**	**3.4364**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation Phase I - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2450	0.0000	0.2450	0.1212	0.0000	0.1212	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1127	1.1849	0.5736	9.9000e-004		0.0622	0.0622		0.0572	0.0572	0.0000	88.8385	88.8385	0.0281	0.0000	89.5412
Total	**0.1127**	**1.1849**	**0.5736**	**9.9000e-004**	**0.2450**	**0.0622**	**0.3072**	**0.1212**	**0.0572**	**0.1784**	**0.0000**	**88.8385**	**88.8385**	**0.0281**	**0.0000**	**89.5412**

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	2.1700e-003	2.0700e-003	0.0198	4.0000e-005	7.9000e-004	3.0000e-005	8.2000e-004	2.7000e-004	3.0000e-005	3.0000e-004	0.0000	3.3887	3.3887	1.7000e-004	1.5000e-004	3.4364
Total	**2.1700e-003**	**2.0700e-003**	**0.0198**	**4.0000e-005**	**7.9000e-004**	**3.0000e-005**	**8.2000e-004**	**2.7000e-004**	**3.0000e-005**	**3.0000e-004**	**0.0000**	**3.3887**	**3.3887**	**1.7000e-004**	**1.5000e-004**	**3.4364**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation Phase I - 2020

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					0.8080	0.0000	0.8080	0.3985	0.0000	0.3985	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1590	1.6543	0.8390	1.4800e-003		0.0857	0.0857		0.0788	0.0788	0.0000	130.3797	130.3797	0.0422	0.0000	131.4338
Total	**0.1590**	**1.6543**	**0.8390**	**1.4800e-003**	**0.8080**	**0.0857**	**0.8937**	**0.3985**	**0.0788**	**0.4773**	**0.0000**	**130.3797**	**130.3797**	**0.0422**	**0.0000**	**131.4338**

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	2.9800e-003	2.7100e-003	0.0267	5.0000e-005	5.5600e-003	4.0000e-005	5.6000e-003	1.4800e-003	4.0000e-005	1.5200e-003	0.0000	4.9498	4.9498	2.3000e-004	2.0000e-004	5.0145
Total	**2.9800e-003**	**2.7100e-003**	**0.0267**	**5.0000e-005**	**5.5600e-003**	**4.0000e-005**	**5.6000e-003**	**1.4800e-003**	**4.0000e-005**	**1.5200e-003**	**0.0000**	**4.9498**	**4.9498**	**2.3000e-004**	**2.0000e-004**	**5.0145**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation Phase I - 2020

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					0.3454	0.0000	0.3454	0.1793	0.0000	0.1793	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1590	1.6543	0.8390	1.4800e-003		0.0857	0.0857		0.0788	0.0788	0.0000	130.3795	130.3795	0.0422	0.0000	131.4337
Total	**0.1590**	**1.6543**	**0.8390**	**1.4800e-003**	**0.3454**	**0.0857**	**0.4311**	**0.1793**	**0.0788**	**0.2582**	**0.0000**	**130.3795**	**130.3795**	**0.0422**	**0.0000**	**131.4337**

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	2.9800e-003	2.7100e-003	0.0267	5.0000e-005	1.1900e-003	4.0000e-005	1.2300e-003	4.1000e-004	4.0000e-005	4.5000e-004	0.0000	4.9498	4.9498	2.3000e-004	2.0000e-004	5.0145
Total	**2.9800e-003**	**2.7100e-003**	**0.0267**	**5.0000e-005**	**1.1900e-003**	**4.0000e-005**	**1.2300e-003**	**4.1000e-004**	**4.0000e-005**	**4.5000e-004**	**0.0000**	**4.9498**	**4.9498**	**2.3000e-004**	**2.0000e-004**	**5.0145**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading Phase I - 2020

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					0.7401	0.0000	0.7401	0.3579	0.0000	0.3579	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2538	2.7573	1.6775	3.1000e-003		0.1331	0.1331		0.1224	0.1224	0.0000	272.3139	272.3139	0.0881	0.0000	274.5157
Total	**0.2538**	**2.7573**	**1.6775**	**3.1000e-003**	**0.7401**	**0.1331**	**0.8732**	**0.3579**	**0.1224**	**0.4803**	**0.0000**	**272.3139**	**272.3139**	**0.0881**	**0.0000**	**274.5157**

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	6.6500e-003	6.0400e-003	0.0596	1.2000e-004	0.0124	1.0000e-004	0.0125	3.3000e-003	9.0000e-005	3.3900e-003	0.0000	11.0524	11.0524	5.2000e-004	4.4000e-004	11.1970
Total	**6.6500e-003**	**6.0400e-003**	**0.0596**	**1.2000e-004**	**0.0124**	**1.0000e-004**	**0.0125**	**3.3000e-003**	**9.0000e-005**	**3.3900e-003**	**0.0000**	**11.0524**	**11.0524**	**5.2000e-004**	**4.4000e-004**	**11.1970**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading Phase I - 2020

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					0.3164	0.0000	0.3164	0.1611	0.0000	0.1611	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2538	2.7573	1.6775	3.1000e-003		0.1331	0.1331		0.1224	0.1224	0.0000	272.3136	272.3136	0.0881	0.0000	274.5154
Total	**0.2538**	**2.7573**	**1.6775**	**3.1000e-003**	**0.3164**	**0.1331**	**0.4495**	**0.1611**	**0.1224**	**0.2835**	**0.0000**	**272.3136**	**272.3136**	**0.0881**	**0.0000**	**274.5154**

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	6.6500e-003	6.0400e-003	0.0596	1.2000e-004	2.6500e-003	1.0000e-004	2.7500e-003	9.1000e-004	9.0000e-005	1.0000e-003	0.0000	11.0524	11.0524	5.2000e-004	4.4000e-004	11.1970
Total	**6.6500e-003**	**6.0400e-003**	**0.0596**	**1.2000e-004**	**2.6500e-003**	**1.0000e-004**	**2.7500e-003**	**9.1000e-004**	**9.0000e-005**	**1.0000e-003**	**0.0000**	**11.0524**	**11.0524**	**5.2000e-004**	**4.4000e-004**	**11.1970**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction Phase I - 2020

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	0.3042	2.7532	2.4178	3.8600e-003		0.1603	0.1603		0.1507	0.1507	0.0000	332.3603	332.3603	0.0811	0.0000	334.3874
Total	**0.3042**	**2.7532**	**2.4178**	**3.8600e-003**		**0.1603**	**0.1603**		**0.1507**	**0.1507**	**0.0000**	**332.3603**	**332.3603**	**0.0811**	**0.0000**	**334.3874**

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	0.0686	1.5515	0.3536	3.7300e-003	0.1033	0.0231	0.1265	0.0299	0.0221	0.0520	0.0000	362.5186	362.5186	8.1100e-003	0.0547	379.0320
Worker	0.4478	0.4066	4.0101	8.1100e-003	0.8350	6.6300e-003	0.8416	0.2221	6.1200e-003	0.2282	0.0000	743.6828	743.6828	0.0350	0.0297	753.4108
Total	**0.5164**	**1.9581**	**4.3637**	**0.0118**	**0.9383**	**0.0298**	**0.9681**	**0.2520**	**0.0283**	**0.2802**	**0.0000**	**1,106.2014**	**1,106.2014**	**0.0431**	**0.0844**	**1,132.4429**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction Phase I - 2020

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	0.3042	2.7532	2.4178	3.8600e-003		0.1603	0.1603		0.1507	0.1507	0.0000	332.3599	332.3599	0.0811	0.0000	334.3870
Total	**0.3042**	**2.7532**	**2.4178**	**3.8600e-003**		**0.1603**	**0.1603**		**0.1507**	**0.1507**	**0.0000**	**332.3599**	**332.3599**	**0.0811**	**0.0000**	**334.3870**

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	0.0686	1.5515	0.3536	3.7300e-003	0.0369	0.0231	0.0600	0.0135	0.0221	0.0357	0.0000	362.5186	362.5186	8.1100e-003	0.0547	379.0320
Worker	0.4478	0.4066	4.0101	8.1100e-003	0.1784	6.6300e-003	0.1850	0.0609	6.1200e-003	0.0671	0.0000	743.6828	743.6828	0.0350	0.0297	753.4108
Total	**0.5164**	**1.9581**	**4.3637**	**0.0118**	**0.2153**	**0.0298**	**0.2450**	**0.0745**	**0.0283**	**0.1027**	**0.0000**	**1,106.2014**	**1,106.2014**	**0.0431**	**0.0844**	**1,132.4429**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction Phase I - 2021

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	0.2975	2.7281	2.5940	4.2100e-003		0.1500	0.1500		0.1411	0.1411	0.0000	362.5123	362.5123	0.0875	0.0000	364.6988
Total	**0.2975**	**2.7281**	**2.5940**	**4.2100e-003**		**0.1500**	**0.1500**		**0.1411**	**0.1411**	**0.0000**	**362.5123**	**362.5123**	**0.0875**	**0.0000**	**364.6988**

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	0.0631	1.5293	0.3501	3.9900e-003	0.1127	0.0209	0.1335	0.0326	0.0200	0.0525	0.0000	388.2874	388.2874	8.4300e-003	0.0586	405.9537
Worker	0.4526	0.3896	3.9823	8.6200e-003	0.9106	6.8800e-003	0.9175	0.2422	6.3500e-003	0.2486	0.0000	792.5413	792.5413	0.0344	0.0296	802.2210
Total	**0.5157**	**1.9189**	**4.3324**	**0.0126**	**1.0233**	**0.0277**	**1.0510**	**0.2748**	**0.0263**	**0.3011**	**0.0000**	**1,180.8287**	**1,180.8287**	**0.0428**	**0.0882**	**1,208.1746**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction Phase I - 2021

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	0.2975	2.7281	2.5940	4.2100e-003		0.1500	0.1500		0.1411	0.1411	0.0000	362.5119	362.5119	0.0875	0.0000	364.6984
Total	**0.2975**	**2.7281**	**2.5940**	**4.2100e-003**		**0.1500**	**0.1500**		**0.1411**	**0.1411**	**0.0000**	**362.5119**	**362.5119**	**0.0875**	**0.0000**	**364.6984**

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	0.0631	1.5293	0.3501	3.9900e-003	0.0402	0.0209	0.0611	0.0148	0.0200	0.0347	0.0000	388.2874	388.2874	8.4300e-003	0.0586	405.9537
Worker	0.4526	0.3896	3.9823	8.6200e-003	0.1945	6.8800e-003	0.2014	0.0665	6.3500e-003	0.0728	0.0000	792.5413	792.5413	0.0344	0.0296	802.2210
Total	**0.5157**	**1.9189**	**4.3324**	**0.0126**	**0.2348**	**0.0277**	**0.2625**	**0.0812**	**0.0263**	**0.1075**	**0.0000**	**1,180.8287**	**1,180.8287**	**0.0428**	**0.0882**	**1,208.1746**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction Phase I - 2022

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	0.2440	2.2330	2.3400	3.8500e-003		0.1157	0.1157		0.1089	0.1089	0.0000	331.3671	331.3671	0.0794	0.0000	333.3518
Total	**0.2440**	**2.2330**	**2.3400**	**3.8500e-003**		**0.1157**	**0.1157**		**0.1089**	**0.1089**	**0.0000**	**331.3671**	**331.3671**	**0.0794**	**0.0000**	**333.3518**

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	0.0386	1.1930	0.2686	3.5500e-003	0.1030	0.0112	0.1142	0.0298	0.0107	0.0405	0.0000	345.9317	345.9317	6.9400e-003	0.0521	361.6393
Worker	0.3846	0.3138	3.3229	7.6500e-003	0.8321	5.9200e-003	0.8380	0.2213	5.4600e-003	0.2268	0.0000	706.4294	706.4294	0.0283	0.0248	714.5236
Total	**0.4232**	**1.5068**	**3.5915**	**0.0112**	**0.9350**	**0.0172**	**0.9522**	**0.2511**	**0.0162**	**0.2673**	**0.0000**	**1,052.3610**	**1,052.3610**	**0.0352**	**0.0769**	**1,076.1629**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction Phase I - 2022

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	0.2440	2.2330	2.3400	3.8500e-003		0.1157	0.1157		0.1089	0.1089	0.0000	331.3667	331.3667	0.0794	0.0000	333.3514
Total	**0.2440**	**2.2330**	**2.3400**	**3.8500e-003**		**0.1157**	**0.1157**		**0.1089**	**0.1089**	**0.0000**	**331.3667**	**331.3667**	**0.0794**	**0.0000**	**333.3514**

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	0.0386	1.1930	0.2686	3.5500e-003	0.0368	0.0112	0.0480	0.0135	0.0107	0.0242	0.0000	345.9317	345.9317	6.9400e-003	0.0521	361.6393
Worker	0.3846	0.3138	3.3229	7.6500e-003	0.1777	5.9200e-003	0.1837	0.0607	5.4600e-003	0.0662	0.0000	706.4294	706.4294	0.0283	0.0248	714.5236
Total	**0.4232**	**1.5068**	**3.5915**	**0.0112**	**0.2145**	**0.0172**	**0.2317**	**0.0742**	**0.0162**	**0.0904**	**0.0000**	**1,052.3610**	**1,052.3610**	**0.0352**	**0.0769**	**1,076.1629**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating Phase I - 2022

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	0.4148					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0215	0.1479	0.1904	3.1000e-004		8.5800e-003	8.5800e-003		8.5800e-003	8.5800e-003	0.0000	26.8092	26.8092	1.7500e-003	0.0000	26.8528
Total	**0.4363**	**0.1479**	**0.1904**	**3.1000e-004**		**8.5800e-003**	**8.5800e-003**		**8.5800e-003**	**8.5800e-003**	**0.0000**	**26.8092**	**26.8092**	**1.7500e-003**	**0.0000**	**26.8528**

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	0.0565	0.0461	0.4880	1.1200e-003	0.1222	8.7000e-004	0.1231	0.0325	8.0000e-004	0.0333	0.0000	103.7414	103.7414	4.1500e-003	3.6400e-003	104.9300
Total	**0.0565**	**0.0461**	**0.4880**	**1.1200e-003**	**0.1222**	**8.7000e-004**	**0.1231**	**0.0325**	**8.0000e-004**	**0.0333**	**0.0000**	**103.7414**	**103.7414**	**4.1500e-003**	**3.6400e-003**	**104.9300**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating Phase I - 2022

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	0.4148					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0215	0.1479	0.1904	3.1000e-004		8.5800e-003	8.5800e-003		8.5800e-003	8.5800e-003	0.0000	26.8091	26.8091	1.7500e-003	0.0000	26.8528
Total	**0.4363**	**0.1479**	**0.1904**	**3.1000e-004**		**8.5800e-003**	**8.5800e-003**		**8.5800e-003**	**8.5800e-003**	**0.0000**	**26.8091**	**26.8091**	**1.7500e-003**	**0.0000**	**26.8528**

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	0.0565	0.0461	0.4880	1.1200e-003	0.0261	8.7000e-004	0.0270	8.9200e-003	8.0000e-004	9.7200e-003	0.0000	103.7414	103.7414	4.1500e-003	3.6400e-003	104.9300
Total	**0.0565**	**0.0461**	**0.4880**	**1.1200e-003**	**0.0261**	**8.7000e-004**	**0.0270**	**8.9200e-003**	**8.0000e-004**	**9.7200e-003**	**0.0000**	**103.7414**	**103.7414**	**4.1500e-003**	**3.6400e-003**	**104.9300**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Paving Phase I - 2022

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	0.0292	0.2948	0.3864	6.0000e-004		0.0151	0.0151		0.0139	0.0139	0.0000	53.0730	53.0730	0.0172	0.0000	53.5022
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0292**	**0.2948**	**0.3864**	**6.0000e-004**		**0.0151**	**0.0151**		**0.0139**	**0.0139**	**0.0000**	**53.0730**	**53.0730**	**0.0172**	**0.0000**	**53.5022**

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	1.4500e-003	1.1900e-003	0.0126	3.0000e-005	3.1500e-003	2.0000e-005	3.1700e-003	8.4000e-004	2.0000e-005	8.6000e-004	0.0000	2.6717	2.6717	1.1000e-004	9.0000e-005	2.7023
Total	**1.4500e-003**	**1.1900e-003**	**0.0126**	**3.0000e-005**	**3.1500e-003**	**2.0000e-005**	**3.1700e-003**	**8.4000e-004**	**2.0000e-005**	**8.6000e-004**	**0.0000**	**2.6717**	**2.6717**	**1.1000e-004**	**9.0000e-005**	**2.7023**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Paving Phase I - 2022

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	0.0292	0.2948	0.3864	6.0000e-004		0.0151	0.0151		0.0139	0.0139	0.0000	53.0730	53.0730	0.0172	0.0000	53.5021
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0292**	**0.2948**	**0.3864**	**6.0000e-004**		**0.0151**	**0.0151**		**0.0139**	**0.0139**	**0.0000**	**53.0730**	**53.0730**	**0.0172**	**0.0000**	**53.5021**

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	1.4500e-003	1.1900e-003	0.0126	3.0000e-005	6.7000e-004	2.0000e-005	6.9000e-004	2.3000e-004	2.0000e-005	2.5000e-004	0.0000	2.6717	2.6717	1.1000e-004	9.0000e-005	2.7023
Total	**1.4500e-003**	**1.1900e-003**	**0.0126**	**3.0000e-005**	**6.7000e-004**	**2.0000e-005**	**6.9000e-004**	**2.3000e-004**	**2.0000e-005**	**2.5000e-004**	**0.0000**	**2.6717**	**2.6717**	**1.1000e-004**	**9.0000e-005**	**2.7023**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Demolition Phase II - 2022

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					1.5800e-003	0.0000	1.5800e-003	2.4000e-004	0.0000	2.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0356	0.3472	0.2780	5.2000e-004		0.0168	0.0168		0.0156	0.0156	0.0000	45.8868	45.8868	0.0129	0.0000	46.2090
Total	**0.0356**	**0.3472**	**0.2780**	**5.2000e-004**	**1.5800e-003**	**0.0168**	**0.0184**	**2.4000e-004**	**0.0156**	**0.0158**	**0.0000**	**45.8868**	**45.8868**	**0.0129**	**0.0000**	**46.2090**

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-004	4.9800e-003	7.1000e-004	1.0000e-005	3.3000e-004	4.0000e-005	3.7000e-004	9.0000e-005	4.0000e-005	1.3000e-004	0.0000	1.3962	1.3962	4.0000e-005	2.2000e-004	1.4631
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	6.0000e-004	6.4000e-003	1.0000e-005	1.6000e-003	1.0000e-005	1.6100e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.3610	1.3610	5.0000e-005	5.0000e-005	1.3766
Total	**8.4000e-004**	**5.5800e-003**	**7.1100e-003**	**2.0000e-005**	**1.9300e-003**	**5.0000e-005**	**1.9800e-003**	**5.2000e-004**	**5.0000e-005**	**5.7000e-004**	**0.0000**	**2.7572**	**2.7572**	**9.0000e-005**	**2.7000e-004**	**2.8397**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Demolition Phase II - 2022

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					6.7000e-004	0.0000	6.7000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0356	0.3472	0.2780	5.2000e-004		0.0168	0.0168		0.0156	0.0156	0.0000	45.8868	45.8868	0.0129	0.0000	46.2090
Total	**0.0356**	**0.3472**	**0.2780**	**5.2000e-004**	**6.7000e-004**	**0.0168**	**0.0175**	**1.1000e-004**	**0.0156**	**0.0157**	**0.0000**	**45.8868**	**45.8868**	**0.0129**	**0.0000**	**46.2090**

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-004	4.9800e-003	7.1000e-004	1.0000e-005	1.0000e-004	4.0000e-005	1.4000e-004	4.0000e-005	4.0000e-005	7.0000e-005	0.0000	1.3962	1.3962	4.0000e-005	2.2000e-004	1.4631
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4000e-004	6.0000e-004	6.4000e-003	1.0000e-005	3.4000e-004	1.0000e-005	3.5000e-004	1.2000e-004	1.0000e-005	1.3000e-004	0.0000	1.3610	1.3610	5.0000e-005	5.0000e-005	1.3766
Total	**8.4000e-004**	**5.5800e-003**	**7.1100e-003**	**2.0000e-005**	**4.4000e-004**	**5.0000e-005**	**4.9000e-004**	**1.6000e-004**	**5.0000e-005**	**2.0000e-004**	**0.0000**	**2.7572**	**2.7572**	**9.0000e-005**	**2.7000e-004**	**2.8397**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Demolition Phase II - 2023

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					5.9600e-003	0.0000	5.9600e-003	9.0000e-004	0.0000	9.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1157	1.0957	1.0018	1.9800e-003		0.0509	0.0509		0.0473	0.0473	0.0000	173.3595	173.3595	0.0486	0.0000	174.5733
Total	**0.1157**	**1.0957**	**1.0018**	**1.9800e-003**	**5.9600e-003**	**0.0509**	**0.0568**	**9.0000e-004**	**0.0473**	**0.0482**	**0.0000**	**173.3595**	**173.3595**	**0.0486**	**0.0000**	**174.5733**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.3000e-004	0.0164	2.4300e-003	5.0000e-005	1.2600e-003	1.1000e-004	1.3700e-003	3.5000e-004	1.0000e-004	4.5000e-004	0.0000	5.1007	5.1007	1.4000e-004	8.1000e-004	5.3452
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	2.6100e-003	2.0200e-003	0.0222	5.0000e-005	6.0600e-003	4.0000e-005	6.1000e-003	1.6100e-003	4.0000e-005	1.6500e-003	0.0000	5.0184	5.0184	1.9000e-004	1.7000e-004	5.0726
Total	**2.8400e-003**	**0.0184**	**0.0246**	**1.0000e-004**	**7.3200e-003**	**1.5000e-004**	**7.4700e-003**	**1.9600e-003**	**1.4000e-004**	**2.1000e-003**	**0.0000**	**10.1192**	**10.1192**	**3.3000e-004**	**9.8000e-004**	**10.4177**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Demolition Phase II - 2023

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					2.5500e-003	0.0000	2.5500e-003	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1157	1.0957	1.0018	1.9800e-003		0.0509	0.0509		0.0473	0.0473	0.0000	173.3593	173.3593	0.0486	0.0000	174.5731
Total	**0.1157**	**1.0957**	**1.0018**	**1.9800e-003**	**2.5500e-003**	**0.0509**	**0.0534**	**4.1000e-004**	**0.0473**	**0.0477**	**0.0000**	**173.3593**	**173.3593**	**0.0486**	**0.0000**	**174.5731**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.3000e-004	0.0164	2.4300e-003	5.0000e-005	4.0000e-004	1.1000e-004	5.0000e-004	1.3000e-004	1.0000e-004	2.4000e-004	0.0000	5.1007	5.1007	1.4000e-004	8.1000e-004	5.3452
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	2.6100e-003	2.0200e-003	0.0222	5.0000e-005	1.2900e-003	4.0000e-005	1.3300e-003	4.4000e-004	4.0000e-005	4.8000e-004	0.0000	5.0184	5.0184	1.9000e-004	1.7000e-004	5.0726
Total	**2.8400e-003**	**0.0184**	**0.0246**	**1.0000e-004**	**1.6900e-003**	**1.5000e-004**	**1.8300e-003**	**5.7000e-004**	**1.4000e-004**	**7.2000e-004**	**0.0000**	**10.1192**	**10.1192**	**3.3000e-004**	**9.8000e-004**	**10.4177**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Site Preparation Phase II - 2023

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					1.2679	0.0000	1.2679	0.6516	0.0000	0.6516	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1715	1.7753	1.1768	2.4600e-003		0.0817	0.0817		0.0751	0.0751	0.0000	215.7570	215.7570	0.0698	0.0000	217.5015
Total	**0.1715**	**1.7753**	**1.1768**	**2.4600e-003**	**1.2679**	**0.0817**	**1.3495**	**0.6516**	**0.0751**	**0.7267**	**0.0000**	**215.7570**	**215.7570**	**0.0698**	**0.0000**	**217.5015**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9600e-003	3.0600e-003	0.0337	8.0000e-005	9.1900e-003	6.0000e-005	9.2500e-003	2.4400e-003	6.0000e-005	2.5000e-003	0.0000	7.6162	7.6162	2.8000e-004	2.5000e-004	7.6984
Total	**3.9600e-003**	**3.0600e-003**	**0.0337**	**8.0000e-005**	**9.1900e-003**	**6.0000e-005**	**9.2500e-003**	**2.4400e-003**	**6.0000e-005**	**2.5000e-003**	**0.0000**	**7.6162**	**7.6162**	**2.8000e-004**	**2.5000e-004**	**7.6984**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Site Preparation Phase II - 2023

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					0.5420	0.0000	0.5420	0.2932	0.0000	0.2932	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1715	1.7753	1.1768	2.4600e-003		0.0817	0.0817		0.0751	0.0751	0.0000	215.7567	215.7567	0.0698	0.0000	217.5012
Total	**0.1715**	**1.7753**	**1.1768**	**2.4600e-003**	**0.5420**	**0.0817**	**0.6237**	**0.2932**	**0.0751**	**0.3684**	**0.0000**	**215.7567**	**215.7567**	**0.0698**	**0.0000**	**217.5012**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9600e-003	3.0600e-003	0.0337	8.0000e-005	1.9600e-003	6.0000e-005	2.0200e-003	6.7000e-004	6.0000e-005	7.3000e-004	0.0000	7.6162	7.6162	2.8000e-004	2.5000e-004	7.6984
Total	**3.9600e-003**	**3.0600e-003**	**0.0337**	**8.0000e-005**	**1.9600e-003**	**6.0000e-005**	**2.0200e-003**	**6.7000e-004**	**6.0000e-005**	**7.3000e-004**	**0.0000**	**7.6162**	**7.6162**	**2.8000e-004**	**2.5000e-004**	**7.6984**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.10 Grading Phase II - 2023

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					0.5489	0.0000	0.5489	0.2654	0.0000	0.2654	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1326	1.3900	1.1432	2.3000e-003		0.0601	0.0601		0.0553	0.0553	0.0000	201.9698	201.9698	0.0653	0.0000	203.6028
Total	**0.1326**	**1.3900**	**1.1432**	**2.3000e-003**	**0.5489**	**0.0601**	**0.6090**	**0.2654**	**0.0553**	**0.3207**	**0.0000**	**201.9698**	**201.9698**	**0.0653**	**0.0000**	**203.6028**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9700e-003	3.0700e-003	0.0337	8.0000e-005	9.2000e-003	6.0000e-005	9.2600e-003	2.4500e-003	6.0000e-005	2.5000e-003	0.0000	7.6261	7.6261	2.8000e-004	2.5000e-004	7.7083
Total	**3.9700e-003**	**3.0700e-003**	**0.0337**	**8.0000e-005**	**9.2000e-003**	**6.0000e-005**	**9.2600e-003**	**2.4500e-003**	**6.0000e-005**	**2.5000e-003**	**0.0000**	**7.6261**	**7.6261**	**2.8000e-004**	**2.5000e-004**	**7.7083**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.10 Grading Phase II - 2023

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					0.2347	0.0000	0.2347	0.1194	0.0000	0.1194	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1326	1.3900	1.1432	2.3000e-003		0.0601	0.0601		0.0553	0.0553	0.0000	201.9695	201.9695	0.0653	0.0000	203.6026
Total	**0.1326**	**1.3900**	**1.1432**	**2.3000e-003**	**0.2347**	**0.0601**	**0.2947**	**0.1194**	**0.0553**	**0.1747**	**0.0000**	**201.9695**	**201.9695**	**0.0653**	**0.0000**	**203.6026**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9700e-003	3.0700e-003	0.0337	8.0000e-005	1.9700e-003	6.0000e-005	2.0300e-003	6.7000e-004	6.0000e-005	7.3000e-004	0.0000	7.6261	7.6261	2.8000e-004	2.5000e-004	7.7083
Total	**3.9700e-003**	**3.0700e-003**	**0.0337**	**8.0000e-005**	**1.9700e-003**	**6.0000e-005**	**2.0300e-003**	**6.7000e-004**	**6.0000e-005**	**7.3000e-004**	**0.0000**	**7.6261**	**7.6261**	**2.8000e-004**	**2.5000e-004**	**7.7083**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Building Construction Phase II - 2023

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	0.2060	1.8844	2.1280	3.5300e-003		0.0917	0.0917		0.0863	0.0863	0.0000	303.6642	303.6642	0.0722	0.0000	305.4701
Total	**0.2060**	**1.8844**	**2.1280**	**3.5300e-003**		**0.0917**	**0.0917**		**0.0863**	**0.0863**	**0.0000**	**303.6642**	**303.6642**	**0.0722**	**0.0000**	**305.4701**

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	0.0209	0.9278	0.2084	3.1500e-003	0.0943	5.1800e-003	0.0995	0.0273	4.9600e-003	0.0322	0.0000	306.5321	306.5321	5.7800e-003	0.0461	320.4218
Worker	0.3285	0.2541	2.7948	6.8000e-003	0.7622	5.1000e-003	0.7673	0.2028	4.7100e-003	0.2075	0.0000	631.6347	631.6347	0.0234	0.0209	638.4456
Total	**0.3494**	**1.1819**	**3.0033**	**9.9500e-003**	**0.8566**	**0.0103**	**0.8669**	**0.2300**	**9.6700e-003**	**0.2397**	**0.0000**	**938.1668**	**938.1668**	**0.0291**	**0.0670**	**958.8674**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Building Construction Phase II - 2023

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	0.2060	1.8844	2.1280	3.5300e-003		0.0917	0.0917		0.0863	0.0863	0.0000	303.6639	303.6639	0.0722	0.0000	305.4698
Total	**0.2060**	**1.8844**	**2.1280**	**3.5300e-003**		**0.0917**	**0.0917**		**0.0863**	**0.0863**	**0.0000**	**303.6639**	**303.6639**	**0.0722**	**0.0000**	**305.4698**

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	0.0209	0.9278	0.2084	3.1500e-003	0.0337	5.1800e-003	0.0389	0.0124	4.9600e-003	0.0173	0.0000	306.5321	306.5321	5.7800e-003	0.0461	320.4218
Worker	0.3285	0.2541	2.7948	6.8000e-003	0.1628	5.1000e-003	0.1679	0.0556	4.7100e-003	0.0603	0.0000	631.6347	631.6347	0.0234	0.0209	638.4456
Total	**0.3494**	**1.1819**	**3.0033**	**9.9500e-003**	**0.1965**	**0.0103**	**0.2068**	**0.0680**	**9.6700e-003**	**0.0777**	**0.0000**	**938.1668**	**938.1668**	**0.0291**	**0.0670**	**958.8674**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Building Construction Phase II - 2024

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	0.2310	2.1107	2.5382	4.2300e-003		0.0963	0.0963		0.0906	0.0906	0.0000	364.0031	364.0031	0.0861	0.0000	366.1550
Total	**0.2310**	**2.1107**	**2.5382**	**4.2300e-003**		**0.0963**	**0.0963**		**0.0906**	**0.0906**	**0.0000**	**364.0031**	**364.0031**	**0.0861**	**0.0000**	**366.1550**

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	0.0238	1.0763	0.2427	3.7100e-003	0.1131	6.0200e-003	0.1191	0.0327	5.7600e-003	0.0384	0.0000	361.0157	361.0157	6.8800e-003	0.0543	377.3697
Worker	0.3683	0.2706	3.0971	7.9000e-003	0.9135	5.7800e-003	0.9193	0.2430	5.3300e-003	0.2483	0.0000	739.4779	739.4779	0.0253	0.0232	747.0103
Total	**0.3921**	**1.3470**	**3.3398**	**0.0116**	**1.0266**	**0.0118**	**1.0384**	**0.2757**	**0.0111**	**0.2867**	**0.0000**	**1,100.4937**	**1,100.4937**	**0.0322**	**0.0775**	**1,124.3800**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Building Construction Phase II - 2024

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	0.2310	2.1107	2.5382	4.2300e-003		0.0963	0.0963		0.0906	0.0906	0.0000	364.0027	364.0027	0.0861	0.0000	366.1546
Total	**0.2310**	**2.1107**	**2.5382**	**4.2300e-003**		**0.0963**	**0.0963**		**0.0906**	**0.0906**	**0.0000**	**364.0027**	**364.0027**	**0.0861**	**0.0000**	**366.1546**

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	0.0238	1.0763	0.2427	3.7100e-003	0.0404	6.0200e-003	0.0464	0.0148	5.7600e-003	0.0206	0.0000	361.0157	361.0157	6.8800e-003	0.0543	377.3697
Worker	0.3683	0.2706	3.0971	7.9000e-003	0.1951	5.7800e-003	0.2009	0.0667	5.3300e-003	0.0720	0.0000	739.4779	739.4779	0.0253	0.0232	747.0103
Total	**0.3921**	**1.3470**	**3.3398**	**0.0116**	**0.2355**	**0.0118**	**0.2473**	**0.0815**	**0.0111**	**0.0926**	**0.0000**	**1,100.4937**	**1,100.4937**	**0.0322**	**0.0775**	**1,124.3800**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Building Construction Phase II - 2025

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	0.1422	1.2969	1.6728	2.8000e-003		0.0549	0.0549		0.0516	0.0516	0.0000	241.1962	241.1962	0.0567	0.0000	242.6137
Total	**0.1422**	**1.2969**	**1.6728**	**2.8000e-003**		**0.0549**	**0.0549**		**0.0516**	**0.0516**	**0.0000**	**241.1962**	**241.1962**	**0.0567**	**0.0000**	**242.6137**

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	0.0150	0.6891	0.1570	2.4100e-003	0.0749	3.8400e-003	0.0787	0.0216	3.6700e-003	0.0253	0.0000	234.6945	234.6945	4.5300e-003	0.0353	245.3222
Worker	0.2292	0.1604	1.9074	5.0700e-003	0.6051	3.6300e-003	0.6088	0.1610	3.3500e-003	0.1643	0.0000	478.9041	478.9041	0.0152	0.0143	483.5327
Total	**0.2443**	**0.8495**	**2.0644**	**7.4800e-003**	**0.6800**	**7.4700e-003**	**0.6875**	**0.1826**	**7.0200e-003**	**0.1896**	**0.0000**	**713.5986**	**713.5986**	**0.0197**	**0.0495**	**728.8548**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Building Construction Phase II - 2025

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	0.1422	1.2969	1.6728	2.8000e-003		0.0549	0.0549		0.0516	0.0516	0.0000	241.1959	241.1959	0.0567	0.0000	242.6134
Total	**0.1422**	**1.2969**	**1.6728**	**2.8000e-003**		**0.0549**	**0.0549**		**0.0516**	**0.0516**	**0.0000**	**241.1959**	**241.1959**	**0.0567**	**0.0000**	**242.6134**

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	0.0150	0.6891	0.1570	2.4100e-003	0.0268	3.8400e-003	0.0306	9.8200e-003	3.6700e-003	0.0135	0.0000	234.6945	234.6945	4.5300e-003	0.0353	245.3222
Worker	0.2292	0.1604	1.9074	5.0700e-003	0.1293	3.6300e-003	0.1329	0.0442	3.3500e-003	0.0475	0.0000	478.9041	478.9041	0.0152	0.0143	483.5327
Total	**0.2443**	**0.8495**	**2.0644**	**7.4800e-003**	**0.1560**	**7.4700e-003**	**0.1635**	**0.0540**	**7.0200e-003**	**0.0610**	**0.0000**	**713.5986**	**713.5986**	**0.0197**	**0.0495**	**728.8548**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.12 Architectural Coating Phase II - 2023

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	0.0689					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.9700e-003	0.0678	0.0942	1.5000e-004		3.6800e-003	3.6800e-003		3.6800e-003	3.6800e-003	0.0000	13.2769	13.2769	7.9000e-004	0.0000	13.2968
Total	**0.0789**	**0.0678**	**0.0942**	**1.5000e-004**		**3.6800e-003**	**3.6800e-003**		**3.6800e-003**	**3.6800e-003**	**0.0000**	**13.2769**	**13.2769**	**7.9000e-004**	**0.0000**	**13.2968**

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	0.0261	0.0202	0.2219	5.4000e-004	0.0605	4.1000e-004	0.0609	0.0161	3.7000e-004	0.0165	0.0000	50.1451	50.1451	1.8500e-003	1.6600e-003	50.6858
Total	**0.0261**	**0.0202**	**0.2219**	**5.4000e-004**	**0.0605**	**4.1000e-004**	**0.0609**	**0.0161**	**3.7000e-004**	**0.0165**	**0.0000**	**50.1451**	**50.1451**	**1.8500e-003**	**1.6600e-003**	**50.6858**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.12 Architectural Coating Phase II - 2023

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	0.0689					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.9700e-003	0.0678	0.0942	1.5000e-004		3.6800e-003	3.6800e-003		3.6800e-003	3.6800e-003	0.0000	13.2769	13.2769	7.9000e-004	0.0000	13.2968
Total	**0.0789**	**0.0678**	**0.0942**	**1.5000e-004**		**3.6800e-003**	**3.6800e-003**		**3.6800e-003**	**3.6800e-003**	**0.0000**	**13.2769**	**13.2769**	**7.9000e-004**	**0.0000**	**13.2968**

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	0.0261	0.0202	0.2219	5.4000e-004	0.0129	4.1000e-004	0.0133	4.4200e-003	3.7000e-004	4.7900e-003	0.0000	50.1451	50.1451	1.8500e-003	1.6600e-003	50.6858
Total	**0.0261**	**0.0202**	**0.2219**	**5.4000e-004**	**0.0129**	**4.1000e-004**	**0.0133**	**4.4200e-003**	**3.7000e-004**	**4.7900e-003**	**0.0000**	**50.1451**	**50.1451**	**1.8500e-003**	**1.6600e-003**	**50.6858**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.12 Architectural Coating Phase II - 2024

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	0.2081					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0284	0.1914	0.2842	4.7000e-004		9.5600e-003	9.5600e-003		9.5600e-003	9.5600e-003	0.0000	40.0861	40.0861	2.2600e-003	0.0000	40.1425
Total	**0.2365**	**0.1914**	**0.2842**	**4.7000e-004**		**9.5600e-003**	**9.5600e-003**		**9.5600e-003**	**9.5600e-003**	**0.0000**	**40.0861**	**40.0861**	**2.2600e-003**	**0.0000**	**40.1425**

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	0.0737	0.0541	0.6194	1.5800e-003	0.1827	1.1600e-003	0.1839	0.0486	1.0700e-003	0.0497	0.0000	147.8956	147.8956	5.0600e-003	4.6300e-003	149.4021
Total	**0.0737**	**0.0541**	**0.6194**	**1.5800e-003**	**0.1827**	**1.1600e-003**	**0.1839**	**0.0486**	**1.0700e-003**	**0.0497**	**0.0000**	**147.8956**	**147.8956**	**5.0600e-003**	**4.6300e-003**	**149.4021**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.12 Architectural Coating Phase II - 2024

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	0.2081					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0284	0.1914	0.2842	4.7000e-004		9.5600e-003	9.5600e-003		9.5600e-003	9.5600e-003	0.0000	40.0860	40.0860	2.2600e-003	0.0000	40.1425
Total	**0.2365**	**0.1914**	**0.2842**	**4.7000e-004**		**9.5600e-003**	**9.5600e-003**		**9.5600e-003**	**9.5600e-003**	**0.0000**	**40.0860**	**40.0860**	**2.2600e-003**	**0.0000**	**40.1425**

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	0.0737	0.0541	0.6194	1.5800e-003	0.0390	1.1600e-003	0.0402	0.0133	1.0700e-003	0.0144	0.0000	147.8956	147.8956	5.0600e-003	4.6300e-003	149.4021
Total	**0.0737**	**0.0541**	**0.6194**	**1.5800e-003**	**0.0390**	**1.1600e-003**	**0.0402**	**0.0133**	**1.0700e-003**	**0.0144**	**0.0000**	**147.8956**	**147.8956**	**5.0600e-003**	**4.6300e-003**	**149.4021**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.12 Architectural Coating Phase II - 2025

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	0.1378					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0178	0.1191	0.1882	3.1000e-004		5.3600e-003	5.3600e-003		5.3600e-003	5.3600e-003	0.0000	26.5538	26.5538	1.4500e-003	0.0000	26.5901
Total	**0.1556**	**0.1191**	**0.1882**	**3.1000e-004**		**5.3600e-003**	**5.3600e-003**		**5.3600e-003**	**5.3600e-003**	**0.0000**	**26.5538**	**26.5538**	**1.4500e-003**	**0.0000**	**26.5901**

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	0.0458	0.0321	0.3815	1.0100e-003	0.1210	7.3000e-004	0.1218	0.0322	6.7000e-004	0.0329	0.0000	95.7808	95.7808	3.0400e-003	2.8500e-003	96.7065
Total	**0.0458**	**0.0321**	**0.3815**	**1.0100e-003**	**0.1210**	**7.3000e-004**	**0.1218**	**0.0322**	**6.7000e-004**	**0.0329**	**0.0000**	**95.7808**	**95.7808**	**3.0400e-003**	**2.8500e-003**	**96.7065**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.12 Architectural Coating Phase II - 2025

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	0.1378					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0178	0.1191	0.1882	3.1000e-004		5.3600e-003	5.3600e-003		5.3600e-003	5.3600e-003	0.0000	26.5538	26.5538	1.4500e-003	0.0000	26.5900
Total	**0.1556**	**0.1191**	**0.1882**	**3.1000e-004**		**5.3600e-003**	**5.3600e-003**		**5.3600e-003**	**5.3600e-003**	**0.0000**	**26.5538**	**26.5538**	**1.4500e-003**	**0.0000**	**26.5900**

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	0.0458	0.0321	0.3815	1.0100e-003	0.0259	7.3000e-004	0.0266	8.8300e-003	6.7000e-004	9.5000e-003	0.0000	95.7808	95.7808	3.0400e-003	2.8500e-003	96.7065
Total	**0.0458**	**0.0321**	**0.3815**	**1.0100e-003**	**0.0259**	**7.3000e-004**	**0.0266**	**8.8300e-003**	**6.7000e-004**	**9.5000e-003**	**0.0000**	**95.7808**	**95.7808**	**3.0400e-003**	**2.8500e-003**	**96.7065**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.13 Paving Phase II - 2025

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	0.0599	0.5621	0.9549	1.4900e-003		0.0274	0.0274		0.0252	0.0252	0.0000	131.1261	131.1261	0.0424	0.0000	132.1863
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0599**	**0.5621**	**0.9549**	**1.4900e-003**		**0.0274**	**0.0274**		**0.0252**	**0.0252**	**0.0000**	**131.1261**	**131.1261**	**0.0424**	**0.0000**	**132.1863**

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	2.9500e-003	2.0600e-003	0.0245	7.0000e-005	7.7800e-003	5.0000e-005	7.8200e-003	2.0700e-003	4.0000e-005	2.1100e-003	0.0000	6.1555	6.1555	2.0000e-004	1.8000e-004	6.2150
Total	**2.9500e-003**	**2.0600e-003**	**0.0245**	**7.0000e-005**	**7.7800e-003**	**5.0000e-005**	**7.8200e-003**	**2.0700e-003**	**4.0000e-005**	**2.1100e-003**	**0.0000**	**6.1555**	**6.1555**	**2.0000e-004**	**1.8000e-004**	**6.2150**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.13 Paving Phase II - 2025

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	0.0599	0.5621	0.9549	1.4900e-003		0.0274	0.0274		0.0252	0.0252	0.0000	131.1260	131.1260	0.0424	0.0000	132.1862
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0599**	**0.5621**	**0.9549**	**1.4900e-003**		**0.0274**	**0.0274**		**0.0252**	**0.0252**	**0.0000**	**131.1260**	**131.1260**	**0.0424**	**0.0000**	**132.1862**

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	2.9500e-003	2.0600e-003	0.0245	7.0000e-005	1.6600e-003	5.0000e-005	1.7100e-003	5.7000e-004	4.0000e-005	6.1000e-004	0.0000	6.1555	6.1555	2.0000e-004	1.8000e-004	6.2150
Total	**2.9500e-003**	**2.0600e-003**	**0.0245**	**7.0000e-005**	**1.6600e-003**	**5.0000e-005**	**1.7100e-003**	**5.7000e-004**	**4.0000e-005**	**6.1000e-004**	**0.0000**	**6.1555**	**6.1555**	**2.0000e-004**	**1.8000e-004**	**6.2150**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.6149	0.7172	5.6387	9.7200e-003	1.0186	8.8800e-003	1.0275	0.2723	8.2900e-003	0.2805	0.0000	921.1539	921.1539	0.0780	0.0462	936.8797
Unmitigated	0.6149	0.7172	5.6387	9.7200e-003	1.0186	8.8800e-003	1.0275	0.2723	8.2900e-003	0.2805	0.0000	921.1539	921.1539	0.0780	0.0462	936.8797

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,116.50	1,116.50	0.00	2,757,011	2,757,011
Library	0.00	0.00	0.00		
Total	1,116.50	1,116.50	0.00	2,757,011	2,757,011

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
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12

4.4 Fleet Mix

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.519141	0.056504	0.203851	0.131576	0.027298	0.006193	0.011024	0.003918	0.000708	0.000836	0.033532	0.001100	0.004319
Library	0.519141	0.056504	0.203851	0.131576	0.027298	0.006193	0.011024	0.003918	0.000708	0.000836	0.033532	0.001100	0.004319

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	369.2098	369.2098	0.0597	7.2400e-003	372.8606
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	371.0937	371.0937	0.0600	7.2800e-003	374.7631
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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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					
Apartments Mid Rise	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
Library	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	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
Library	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			
Apartments Mid Rise	3.94467e+006	364.9753	0.0591	7.1600e-003	368.5843
Library	66127	6.1183	9.9000e-004	1.2000e-004	6.1788
Total		**371.0937**	**0.0600**	**7.2800e-003**	**374.7631**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	3.92623e+006	363.2693	0.0588	7.1200e-003	366.8614
Library	64204.6	5.9405	9.6000e-004	1.2000e-004	5.9992
Total		**369.2098**	**0.0597**	**7.2400e-003**	**372.8606**

6.0 Area Detail

UCSC Kresge EIR Addendum - Santa Cruz County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.8823	0.1205	10.4575	5.5000e-004		0.0580	0.0580		0.0580	0.0580	0.0000	17.0985	17.0985	0.0164	0.0000	17.5078
Unmitigated	0.8823	0.1205	10.4575	5.5000e-004		0.0580	0.0580		0.0580	0.0580	0.0000	17.0985	17.0985	0.0164	0.0000	17.5078

UCSC Kresge EIR Addendum - Santa Cruz County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.0415					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5269					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3140	0.1205	10.4575	5.5000e-004		0.0580	0.0580		0.0580	0.0580	0.0000	17.0985	17.0985	0.0164	0.0000	17.5078
Total	**0.8823**	**0.1205**	**10.4575**	**5.5000e-004**		**0.0580**	**0.0580**		**0.0580**	**0.0580**	**0.0000**	**17.0985**	**17.0985**	**0.0164**	**0.0000**	**17.5078**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0415					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5269					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3140	0.1205	10.4575	5.5000e-004		0.0580	0.0580		0.0580	0.0580	0.0000	17.0985	17.0985	0.0164	0.0000	17.5078
Total	**0.8823**	**0.1205**	**10.4575**	**5.5000e-004**		**0.0580**	**0.0580**		**0.0580**	**0.0580**	**0.0000**	**17.0985**	**17.0985**	**0.0164**	**0.0000**	**17.5078**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	59.0371	0.0712	0.0417	73.2337
Unmitigated	70.3858	0.0885	0.0520	88.0978

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	66.1313 / 41.6915	70.0069	0.0881	0.0518	87.6438
Library	0.278471 / 0.435558	0.3790	3.8000e-004	2.2000e-004	0.4541
Total		**70.3859**	**0.0885**	**0.0520**	**88.0978**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	52.9051 / 41.6915	58.7057	0.0709	0.0415	72.8419
Library	0.222777 / 0.435558	0.3314	3.1000e-004	1.8000e-004	0.3918
Total		**59.0371**	**0.0712**	**0.0417**	**73.2337**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	96.4410	5.6995	0.0000	238.9285
Unmitigated	96.4410	5.6995	0.0000	238.9285

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	466.9	94.7765	5.6011	0.0000	234.8047
Library	8.2	1.6645	0.0984	0.0000	4.1238
Total		**96.4410**	**5.6995**	**0.0000**	**238.9285**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	466.9	94.7765	5.6011	0.0000	234.8047
Library	8.2	1.6645	0.0984	0.0000	4.1238
Total		**96.4410**	**5.6995**	**0.0000**	**238.9285**

9.0 Operational Offroad

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

UCSC Kresge EIR Addendum

Santa Cruz County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Library	8.90	1000sqft	0.00	8,900.00	0
Apartments Mid Rise	1,015.00	Dwelling Unit	8.00	126,000.00	1015

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	1.8	**Precipitation Freq (Days)**	61
Climate Zone	5			**Operational Year**	2025
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Library land uses accounts for academic, student support, and town hall uses (8,900sf). The apartment mid-rise are account for all beds and the square footage for apartments + cafe (46,000+80,000 sf)

Construction Phase - Applicant provided schedule. This is a two phased construction (Phase I and Phase II) on a 6 day/week schedule

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Default equipment for all phases

Off-road Equipment -

Off-road Equipment -

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Demolition waste equals 3,182 cubic yards . Split the waste removal with same percentage as building demo (Phase I=70% and Phase II= 30%). Phase I = 2,227 cy and Phase II = 955 cy. Added on top of building demo haul trips

Demolition - Building Square footage to be demolished = 51,670 sf . Split the total similar to the original EIR with 70% in Phase I and 30% in Phase II.

Grading - There would no net export of soil from the University instead of exporting the University will use soil for on-campus purposes.

Architectural Coating - Pursuant with MBARD Rule 476, the architectural coating rate would be 50 g/L

Vehicle Trips - Cumulative Conditions with Kresge College scenario = 25,378 trips. Modified trip gen rates using the daily trips, assuming trips would be similar for University/College ITE where there are only weekday and sat trips.

Woodstoves - No woodstoves or hearths in proposed residences

Area Coating - Pursuant with MBARD Rule 476, the architectural coating rate would be 50 g/L

Water And Wastewater - Water and wastewater is treated at the City of Santa Cruz Public Works Wastewater System, 100% aerobic https://www.cityofsantacruz.com/government/city-departments/public-works/wastewater-treatment-facility

Solid Waste - Campus Net 0 Waste by 2020 - 90% reduction. Reduced the default tons/year estimate by 90%

Construction Off-road Equipment Mitigation - 205 LRDP MM AIR-1. Soil Stabilizer, clean road, and ground cover

Area Mitigation -

Energy Mitigation - Exceed the Title 24 standards by 20%

Water Mitigation - 20% indoor water reduction pursuant with CalGreen

Energy Use - Natural gas zeroed to account for UCSC energy policies

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	50
tblAreaCoating	Area_EF_Nonresidential_Interior	150	50
tblAreaCoating	Area_EF_Residential_Exterior	100	50
tblAreaCoating	Area_EF_Residential_Interior	100	50
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	91
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	626.00
tblConstructionPhase	NumDays	20.00	210.00
tblConstructionPhase	NumDays	230.00	784.00
tblConstructionPhase	NumDays	230.00	886.00
tblConstructionPhase	NumDays	20.00	157.00
tblConstructionPhase	NumDays	20.00	129.00
tblConstructionPhase	NumDays	20.00	209.00
tblConstructionPhase	NumDays	20.00	155.00
tblConstructionPhase	NumDays	20.00	131.00
tblConstructionPhase	NumDays	20.00	53.00
tblConstructionPhase	NumDays	10.00	130.00
tblConstructionPhase	NumDays	10.00	129.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblEnergyUse	NT24NG	2,615.00	0.00
tblEnergyUse	NT24NG	6.90	0.00
tblEnergyUse	T24NG	5,828.01	0.00
tblEnergyUse	T24NG	17.67	0.00
tblFireplaces	NumberGas	1,015.00	0.00
tblLandUse	LandUseSquareFeet	1,015,000.00	126,000.00
tblLandUse	LotAcreage	0.20	0.00
tblLandUse	LotAcreage	26.71	8.00
tblLandUse	Population	2,903.00	1,015.00
tblTripsAndVMT	HaulingTripNumber	165.00	443.00
tblTripsAndVMT	HaulingTripNumber	71.00	190.00
tblVehicleTrips	ST_TR	4.91	1.10
tblVehicleTrips	ST_TR	80.09	0.00
tblVehicleTrips	SU_TR	4.09	0.00
tblVehicleTrips	SU_TR	42.09	0.00
tblVehicleTrips	WD_TR	5.44	1.10
tblVehicleTrips	WD_TR	72.05	0.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	8.0380	82.4174	45.7347	0.0817	20.2012	4.2027	24.4038	10.2217	3.8854	14.1070	0.0000	8,090.6890	8,090.6890	2.2732	0.0471	8,161.5589
2020	15.7824	135.1676	109.6749	0.2243	34.1869	6.4664	40.6533	15.4940	5.9940	21.4881	0.0000	22,226.2573	22,226.2573	4.1419	0.6790	22,532.1478
2021	5.2113	29.0846	45.1783	0.1099	6.7800	1.1357	7.9157	1.8150	1.0692	2.8842	0.0000	11,115.7696	11,115.7696	0.9048	0.6033	11,318.1573
2022	10.5310	39.0740	63.9478	0.1457	8.1109	1.9051	9.6984	2.1680	1.7713	3.6549	0.0000	14,646.2538	14,646.2538	1.8375	0.6152	14,870.8157
2023	11.0567	90.3165	93.9545	0.2163	34.0565	3.8213	37.8777	15.4715	3.5421	19.0136	0.0000	21,459.7996	21,459.7996	4.0279	0.5812	21,732.4156
2024	5.9510	23.1216	43.8770	0.1165	7.9877	0.7566	8.7443	2.1353	0.7151	2.8504	0.0000	11,872.0401	11,872.0401	0.8689	0.5598	12,060.5720
2025	6.6176	30.2702	56.9648	0.1379	8.1110	1.0770	9.1880	2.1680	1.0073	3.1754	0.0000	13,994.5136	13,994.5136	1.5623	0.5428	14,195.3166
Maximum	**15.7824**	**135.1676**	**109.6749**	**0.2243**	**34.1869**	**6.4664**	**40.6533**	**15.4940**	**5.9940**	**21.4881**	**0.0000**	**22,226.2573**	**22,226.2573**	**4.1419**	**0.6790**	**22,532.1478**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	8.0380	82.4174	45.7347	0.0817	8.5709	4.2027	12.7735	4.5857	3.8854	8.4711	0.0000	8,090.6890	8,090.6890	2.2732	0.0471	8,161.5589
2020	15.7824	135.1676	109.6749	0.2243	13.1462	6.4664	19.6126	6.6599	5.9940	12.6539	0.0000	22,226.2573	22,226.2573	4.1419	0.6790	22,532.1478
2021	5.2113	29.0846	45.1783	0.1099	1.5218	1.1357	2.6575	0.5243	1.0692	1.5935	0.0000	11,115.7696	11,115.7696	0.9048	0.6033	11,318.1572
2022	10.5310	39.0740	63.9478	0.1457	1.8001	1.9051	3.3876	0.6190	1.7713	2.1059	0.0000	14,646.2538	14,646.2538	1.8375	0.6152	14,870.8157
2023	11.0567	90.3165	93.9545	0.2163	13.0933	3.8213	16.9146	6.6502	3.5421	10.1923	0.0000	21,459.7996	21,459.7996	4.0279	0.5812	21,732.4155
2024	5.9510	23.1216	43.8770	0.1165	1.7744	0.7566	2.5311	0.6103	0.7151	1.3253	0.0000	11,872.0401	11,872.0401	0.8689	0.5598	12,060.5720
2025	6.6176	30.2702	56.9648	0.1379	1.8003	1.0770	2.8773	0.6190	1.0073	1.6263	0.0000	13,994.5136	13,994.5136	1.5623	0.5428	14,195.3166
Maximum	**15.7824**	**135.1676**	**109.6749**	**0.2243**	**13.1462**	**6.4664**	**19.6126**	**6.6599**	**5.9940**	**12.6539**	**0.0000**	**22,226.2573**	**22,226.2573**	**4.1419**	**0.6790**	**22,532.1478**

	ROG	NOx	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**	**65.08**	**0.00**	**56.13**	**59.03**	**0.00**	**43.48**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	5.6261	0.9637	83.6604	4.4200e-003		0.4642	0.4642		0.4642	0.4642	0.0000	150.7825	150.7825	0.1444	0.0000	154.3924
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	4.0989	4.2232	34.9730	0.0645	6.7738	0.0570	6.8307	1.8051	0.0532	1.8583		6,733.4959	6,733.4959	0.5211	0.3083	6,838.4017
Total	**9.7250**	**5.1869**	**118.6333**	**0.0689**	**6.7738**	**0.5212**	**7.2949**	**1.8051**	**0.5174**	**2.3225**	**0.0000**	**6,884.2784**	**6,884.2784**	**0.6655**	**0.3083**	**6,992.7941**

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	5.6261	0.9637	83.6604	4.4200e-003		0.4642	0.4642		0.4642	0.4642	0.0000	150.7825	150.7825	0.1444	0.0000	154.3924
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	4.0989	4.2232	34.9730	0.0645	6.7738	0.0570	6.8307	1.8051	0.0532	1.8583		6,733.4959	6,733.4959	0.5211	0.3083	6,838.4017
Total	**9.7250**	**5.1869**	**118.6333**	**0.0689**	**6.7738**	**0.5212**	**7.2949**	**1.8051**	**0.5174**	**2.3225**	**0.0000**	**6,884.2784**	**6,884.2784**	**0.6655**	**0.3083**	**6,992.7941**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	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 Phase I	Demolition	10/1/2019	3/31/2020	6	157	
2	Site Preparation Phase I	Site Preparation	11/1/2019	3/31/2020	6	130	
3	Grading Phase I	Grading	1/1/2020	8/31/2020	6	209	
4	Building Construction Phase I	Building Construction	2/1/2020	11/30/2022	6	886	
5	Architectural Coating Phase I	Architectural Coating	5/1/2022	12/31/2022	6	210	
6	Paving Phase I	Paving	11/1/2022	12/31/2022	6	53	
7	Demolition Phase II	Demolition	12/1/2022	4/30/2023	6	129	
8	Site Preparation Phase II	Site Preparation	1/1/2023	5/31/2023	6	129	
9	Grading Phase II	Grading	1/1/2023	6/30/2023	6	155	
10	Building Construction Phase II	Building Construction	3/1/2023	8/31/2025	6	784	
11	Architectural Coating Phase II	Architectural Coating	9/1/2023	8/31/2025	6	626	
12	Paving Phase II	Paving	4/1/2025	8/31/2025	6	131	

Acres of Grading (Site Preparation Phase): 195

Acres of Grading (Grading Phase): 209

Acres of Paving: 0

Residential Indoor: 255,150; Residential Outdoor: 85,050; Non-Residential Indoor: 13,350; Non-Residential Outdoor: 4,450; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition Phase I	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition Phase I	Excavators	3	8.00	158	0.38
Demolition Phase I	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation Phase I	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation Phase I	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading Phase I	Excavators	1	8.00	158	0.38
Grading Phase I	Graders	1	8.00	187	0.41
Grading Phase I	Rubber Tired Dozers	1	8.00	247	0.40
Grading Phase I	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction Phase I	Cranes	1	7.00	231	0.29
Building Construction Phase I	Forklifts	3	8.00	89	0.20
Building Construction Phase I	Generator Sets	1	8.00	84	0.74
Building Construction Phase I	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction Phase I	Welders	1	8.00	46	0.45
Architectural Coating Phase I	Air Compressors	1	6.00	78	0.48
Paving Phase I	Pavers	2	8.00	130	0.42
Paving Phase I	Paving Equipment	2	8.00	132	0.36
Paving Phase I	Rollers	2	8.00	80	0.38
Demolition Phase II	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition Phase II	Excavators	3	8.00	158	0.38
Demolition Phase II	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation Phase II	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation Phase II	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading Phase II	Excavators	1	8.00	158	0.38
Grading Phase II	Graders	1	8.00	187	0.41
Grading Phase II	Rubber Tired Dozers	1	8.00	247	0.40
Grading Phase II	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction Phase II	Cranes	1	7.00	231	0.29

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction Phase II	Forklifts	3	8.00	89	0.20
Building Construction Phase II	Generator Sets	1	8.00	84	0.74
Building Construction Phase II	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction Phase II	Welders	1	8.00	46	0.45
Architectural Coating Phase II	Air Compressors	1	6.00	78	0.48
Paving Phase II	Pavers	2	8.00	130	0.42
Paving Phase II	Paving Equipment	2	8.00	132	0.36
Paving Phase II	Rollers	2	8.00	80	0.38

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 Phase I	6	15.00	0.00	443.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation Phase I	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading Phase I	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction Phase I	9	735.00	110.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating Phase I	1	147.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving Phase I	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition Phase II	6	15.00	0.00	190.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation Phase II	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading Phase II	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction Phase II	9	735.00	110.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating Phase II	1	147.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving Phase II	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition Phase I - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2241	0.0000	0.2241	0.0339	0.0000	0.0339			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697		3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.2241**	**1.7949**	**2.0190**	**0.0339**	**1.6697**	**1.7036**		**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition Phase I - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0357	0.9335	0.1556	2.1400e-003	0.0490	0.0152	0.0642	0.0134	0.0146	0.0279		232.3179	232.3179	6.7600e-003	0.0368	243.4455
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
Worker	0.0700	0.0583	0.6618	1.2400e-003	0.1232	9.9000e-004	0.1242	0.0327	9.2000e-004	0.0336		125.0086	125.0086	5.8700e-003	4.7000e-003	126.5562
Total	**0.1057**	**0.9918**	**0.8175**	**3.3800e-003**	**0.1722**	**0.0162**	**0.1884**	**0.0461**	**0.0155**	**0.0615**		**357.3265**	**357.3265**	**0.0126**	**0.0415**	**370.0018**

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					0.0958	0.0000	0.0958	0.0153	0.0000	0.0153			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697	0.0000	3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.0958**	**1.7949**	**1.8907**	**0.0153**	**1.6697**	**1.6849**	**0.0000**	**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition Phase I - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0357	0.9335	0.1556	2.1400e-003	0.0150	0.0152	0.0302	5.0500e-003	0.0146	0.0196		232.3179	232.3179	6.7600e-003	0.0368	243.4455
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
Worker	0.0700	0.0583	0.6618	1.2400e-003	0.0258	9.9000e-004	0.0268	8.7600e-003	9.2000e-004	9.6800e-003		125.0086	125.0086	5.8700e-003	4.7000e-003	126.5562
Total	**0.1057**	**0.9918**	**0.8175**	**3.3800e-003**	**0.0408**	**0.0162**	**0.0570**	**0.0138**	**0.0155**	**0.0293**		**357.3265**	**357.3265**	**0.0126**	**0.0415**	**370.0018**

3.2 Demolition Phase I - 2020

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					0.2241	0.0000	0.2241	0.0339	0.0000	0.0339			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.2241**	**1.6587**	**1.8828**	**0.0339**	**1.5419**	**1.5758**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition Phase I - 2020

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	0.0233	0.8549	0.1209	2.1100e-003	0.0490	9.6200e-003	0.0586	0.0134	9.2100e-003	0.0226		228.8476	228.8476	6.3800e-003	0.0362	239.8042
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
Worker	0.0641	0.0508	0.5928	1.2000e-003	0.1232	9.4000e-004	0.1242	0.0327	8.7000e-004	0.0336		121.7144	121.7144	5.2000e-003	4.2600e-003	123.1153
Total	**0.0873**	**0.9056**	**0.7138**	**3.3100e-003**	**0.1722**	**0.0106**	**0.1827**	**0.0461**	**0.0101**	**0.0561**		**350.5620**	**350.5620**	**0.0116**	**0.0405**	**362.9195**

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					0.0958	0.0000	0.0958	0.0153	0.0000	0.0153			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.0958**	**1.6587**	**1.7545**	**0.0153**	**1.5419**	**1.5571**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition Phase I - 2020

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	0.0233	0.8549	0.1209	2.1100e-003	0.0150	9.6200e-003	0.0246	5.0500e-003	9.2100e-003	0.0143		228.8476	228.8476	6.3800e-003	0.0362	239.8042
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
Worker	0.0641	0.0508	0.5928	1.2000e-003	0.0258	9.4000e-004	0.0267	8.7600e-003	8.7000e-004	9.6300e-003		121.7144	121.7144	5.2000e-003	4.2600e-003	123.1153
Total	**0.0873**	**0.9056**	**0.7138**	**3.3100e-003**	**0.0408**	**0.0106**	**0.0513**	**0.0138**	**0.0101**	**0.0239**		**350.5620**	**350.5620**	**0.0116**	**0.0405**	**362.9195**

3.3 Site Preparation Phase I - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**19.6570**	**2.3904**	**22.0474**	**10.1025**	**2.1991**	**12.3016**		**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation Phase I - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	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
Worker	0.0840	0.0699	0.7942	1.4800e-003	0.1479	1.1900e-003	0.1491	0.0392	1.1000e-003	0.0403		150.0103	150.0103	7.0400e-003	5.6400e-003	151.8675
Total	**0.0840**	**0.0699**	**0.7942**	**1.4800e-003**	**0.1479**	**1.1900e-003**	**0.1491**	**0.0392**	**1.1000e-003**	**0.0403**		**150.0103**	**150.0103**	**7.0400e-003**	**5.6400e-003**	**151.8675**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.4034	0.0000	8.4034	4.5461	0.0000	4.5461			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**8.4034**	**2.3904**	**10.7937**	**4.5461**	**2.1991**	**6.7452**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation Phase I - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	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
Worker	0.0840	0.0699	0.7942	1.4800e-003	0.0309	1.1900e-003	0.0321	0.0105	1.1000e-003	0.0116		150.0103	150.0103	7.0400e-003	5.6400e-003	151.8675
Total	**0.0840**	**0.0699**	**0.7942**	**1.4800e-003**	**0.0309**	**1.1900e-003**	**0.0321**	**0.0105**	**1.1000e-003**	**0.0116**		**150.0103**	**150.0103**	**7.0400e-003**	**5.6400e-003**	**151.8675**

3.3 Site Preparation Phase I - 2020

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					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**19.6570**	**2.1974**	**21.8544**	**10.1025**	**2.0216**	**12.1241**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation Phase I - 2020

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	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
Worker	0.0769	0.0609	0.7114	1.4400e-003	0.1479	1.1300e-003	0.1490	0.0392	1.0400e-003	0.0403		146.0573	146.0573	6.2400e-003	5.1200e-003	147.7384
Total	**0.0769**	**0.0609**	**0.7114**	**1.4400e-003**	**0.1479**	**1.1300e-003**	**0.1490**	**0.0392**	**1.0400e-003**	**0.0403**		**146.0573**	**146.0573**	**6.2400e-003**	**5.1200e-003**	**147.7384**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.4034	0.0000	8.4034	4.5461	0.0000	4.5461			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**8.4034**	**2.1974**	**10.6008**	**4.5461**	**2.0216**	**6.5677**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation Phase I - 2020

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	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
Worker	0.0769	0.0609	0.7114	1.4400e-003	0.0309	1.1300e-003	0.0321	0.0105	1.0400e-003	0.0116		146.0573	146.0573	6.2400e-003	5.1200e-003	147.7384
Total	**0.0769**	**0.0609**	**0.7114**	**1.4400e-003**	**0.0309**	**1.1300e-003**	**0.0321**	**0.0105**	**1.0400e-003**	**0.0116**		**146.0573**	**146.0573**	**6.2400e-003**	**5.1200e-003**	**147.7384**

3.4 Grading Phase I - 2020

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					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716		2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**7.0826**	**1.2734**	**8.3560**	**3.4247**	**1.1716**	**4.5963**		**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading Phase I - 2020

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	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
Worker	0.0641	0.0508	0.5928	1.2000e-003	0.1232	9.4000e-004	0.1242	0.0327	8.7000e-004	0.0336		121.7144	121.7144	5.2000e-003	4.2600e-003	123.1153
Total	**0.0641**	**0.0508**	**0.5928**	**1.2000e-003**	**0.1232**	**9.4000e-004**	**0.1242**	**0.0327**	**8.7000e-004**	**0.0336**		**121.7144**	**121.7144**	**5.2000e-003**	**4.2600e-003**	**123.1153**

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					3.0278	0.0000	3.0278	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716	0.0000	2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**3.0278**	**1.2734**	**4.3012**	**1.5411**	**1.1716**	**2.7127**	**0.0000**	**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading Phase I - 2020

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	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
Worker	0.0641	0.0508	0.5928	1.2000e-003	0.0258	9.4000e-004	0.0267	8.7600e-003	8.7000e-004	9.6300e-003		121.7144	121.7144	5.2000e-003	4.2600e-003	123.1153
Total	**0.0641**	**0.0508**	**0.5928**	**1.2000e-003**	**0.0258**	**9.4000e-004**	**0.0267**	**8.7600e-003**	**8.7000e-004**	**9.6300e-003**		**121.7144**	**121.7144**	**5.2000e-003**	**4.2600e-003**	**123.1153**

3.5 Building Construction Phase I - 2020

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction Phase I - 2020

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	0.0000
Vendor	0.4778	10.4735	2.4396	0.0260	0.7421	0.1610	0.9031	0.2134	0.1540	0.3675		2,785.5620	2,785.5620	0.0625	0.4202	2,912.3274
Worker	3.1391	2.4866	29.0489	0.0590	6.0379	0.0462	6.0841	1.6015	0.0427	1.6442		5,964.0069	5,964.0069	0.2548	0.2090	6,032.6510
Total	**3.6169**	**12.9601**	**31.4886**	**0.0850**	**6.7800**	**0.2072**	**6.9872**	**1.8150**	**0.1967**	**2.0116**		**8,749.5689**	**8,749.5689**	**0.3172**	**0.6291**	**8,944.9784**

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction Phase I - 2020

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	0.0000
Vendor	0.4778	10.4735	2.4396	0.0260	0.2591	0.1610	0.4201	0.0949	0.1540	0.2489		2,785.5620	2,785.5620	0.0625	0.4202	2,912.3274
Worker	3.1391	2.4866	29.0489	0.0590	1.2627	0.0462	1.3089	0.4294	0.0427	0.4721		5,964.0069	5,964.0069	0.2548	0.2090	6,032.6510
Total	**3.6169**	**12.9601**	**31.4886**	**0.0850**	**1.5217**	**0.2072**	**1.7289**	**0.5243**	**0.1967**	**0.7210**		**8,749.5689**	**8,749.5689**	**0.3172**	**0.6291**	**8,944.9784**

3.5 Building Construction Phase I - 2021

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction Phase I - 2021

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	0.0000
Vendor	0.4031	9.4676	2.2114	0.0255	0.7422	0.1331	0.8752	0.2134	0.1273	0.3408		2,735.4453	2,735.4453	0.0595	0.4123	2,859.7977
Worker	2.9072	2.1850	26.3917	0.0575	6.0379	0.0440	6.0818	1.6015	0.0406	1.6421		5,826.9604	5,826.9604	0.2293	0.1910	5,889.5953
Total	**3.3104**	**11.6525**	**28.6031**	**0.0830**	**6.7800**	**0.1771**	**6.9571**	**1.8150**	**0.1679**	**1.9829**		**8,562.4057**	**8,562.4057**	**0.2888**	**0.6033**	**8,749.3930**

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction Phase I - 2021

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	0.0000
Vendor	0.4031	9.4676	2.2114	0.0255	0.2591	0.1331	0.3922	0.0949	0.1273	0.2222		2,735.4453	2,735.4453	0.0595	0.4123	2,859.7977
Worker	2.9072	2.1850	26.3917	0.0575	1.2627	0.0440	1.3067	0.4294	0.0406	0.4700		5,826.9604	5,826.9604	0.2293	0.1910	5,889.5953
Total	**3.3104**	**11.6525**	**28.6031**	**0.0830**	**1.5218**	**0.1771**	**1.6988**	**0.5243**	**0.1679**	**0.6922**		**8,562.4057**	**8,562.4057**	**0.2888**	**0.6033**	**8,749.3930**

3.5 Building Construction Phase I - 2022

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction Phase I - 2022

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	0.0000
Vendor	0.2701	8.0849	1.8522	0.0249	0.7422	0.0784	0.8206	0.2135	0.0750	0.2884		2,666.8065	2,666.8065	0.0536	0.4015	2,787.8076
Worker	2.7011	1.9262	24.0396	0.0559	6.0379	0.0414	6.0792	1.6015	0.0382	1.6397		5,683.3489	5,683.3489	0.2058	0.1751	5,740.6690
Total	**2.9712**	**10.0110**	**25.8918**	**0.0807**	**6.7801**	**0.1198**	**6.8998**	**1.8150**	**0.1132**	**1.9281**		**8,350.1554**	**8,350.1554**	**0.2594**	**0.5766**	**8,528.4766**

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction Phase I - 2022

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	0.0000
Vendor	0.2701	8.0849	1.8522	0.0249	0.2592	0.0784	0.3375	0.0949	0.0750	0.1699		2,666.8065	2,666.8065	0.0536	0.4015	2,787.8076
Worker	2.7011	1.9262	24.0396	0.0559	1.2627	0.0414	1.3041	0.4294	0.0382	0.4676		5,683.3489	5,683.3489	0.2058	0.1751	5,740.6690
Total	**2.9712**	**10.0110**	**25.8918**	**0.0807**	**1.5218**	**0.1198**	**1.6416**	**0.5243**	**0.1132**	**0.6375**		**8,350.1554**	**8,350.1554**	**0.2594**	**0.5766**	**8,528.4766**

3.6 Architectural Coating Phase I - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.9508					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**4.1553**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating Phase I - 2022

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	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
Worker	0.5402	0.3852	4.8079	0.0112	1.2076	8.2800e-003	1.2159	0.3203	7.6400e-003	0.3279		1,136.6698	1,136.6698	0.0412	0.0350	1,148.1338
Total	**0.5402**	**0.3852**	**4.8079**	**0.0112**	**1.2076**	**8.2800e-003**	**1.2159**	**0.3203**	**7.6400e-003**	**0.3279**		**1,136.6698**	**1,136.6698**	**0.0412**	**0.0350**	**1,148.1338**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.9508					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**4.1553**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating Phase I - 2022

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	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
Worker	0.5402	0.3852	4.8079	0.0112	0.2525	8.2800e-003	0.2608	0.0859	7.6400e-003	0.0935		1,136.6698	1,136.6698	0.0412	0.0350	1,148.1338
Total	**0.5402**	**0.3852**	**4.8079**	**0.0112**	**0.2525**	**8.2800e-003**	**0.2608**	**0.0859**	**7.6400e-003**	**0.0935**		**1,136.6698**	**1,136.6698**	**0.0412**	**0.0350**	**1,148.1338**

3.7 Paving Phase I - 2022

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Paving Phase I - 2022

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	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
Worker	0.0551	0.0393	0.4906	1.1400e-003	0.1232	8.4000e-004	0.1241	0.0327	7.8000e-004	0.0335		115.9867	115.9867	4.2000e-003	3.5700e-003	117.1565
Total	**0.0551**	**0.0393**	**0.4906**	**1.1400e-003**	**0.1232**	**8.4000e-004**	**0.1241**	**0.0327**	**7.8000e-004**	**0.0335**		**115.9867**	**115.9867**	**4.2000e-003**	**3.5700e-003**	**117.1565**

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Paving Phase I - 2022

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	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
Worker	0.0551	0.0393	0.4906	1.1400e-003	0.0258	8.4000e-004	0.0266	8.7600e-003	7.8000e-004	9.5400e-003		115.9867	115.9867	4.2000e-003	3.5700e-003	117.1565
Total	**0.0551**	**0.0393**	**0.4906**	**1.1400e-003**	**0.0258**	**8.4000e-004**	**0.0266**	**8.7600e-003**	**7.8000e-004**	**9.5400e-003**		**115.9867**	**115.9867**	**4.2000e-003**	**3.5700e-003**	**117.1565**

3.8 Demolition Phase II - 2022

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					0.1169	0.0000	0.1169	0.0177	0.0000	0.0177			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**0.1169**	**1.2427**	**1.3595**	**0.0177**	**1.1553**	**1.1730**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Demolition Phase II - 2022

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	7.1700e-003	0.3574	0.0522	1.0500e-003	0.0256	2.8100e-003	0.0284	6.9900e-003	2.6800e-003	9.6700e-003		114.0033	114.0033	3.2100e-003	0.0181	119.4642
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
Worker	0.0551	0.0393	0.4906	1.1400e-003	0.1232	8.4000e-004	0.1241	0.0327	7.8000e-004	0.0335		115.9867	115.9867	4.2000e-003	3.5700e-003	117.1565
Total	**0.0623**	**0.3967**	**0.5428**	**2.1900e-003**	**0.1488**	**3.6500e-003**	**0.1524**	**0.0397**	**3.4600e-003**	**0.0431**		**229.9900**	**229.9900**	**7.4100e-003**	**0.0216**	**236.6207**

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					0.0500	0.0000	0.0500	7.9600e-003	0.0000	7.9600e-003			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**0.0500**	**1.2427**	**1.2926**	**7.9600e-003**	**1.1553**	**1.1632**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Demolition Phase II - 2022

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	7.1700e-003	0.3574	0.0522	1.0500e-003	7.8400e-003	2.8100e-003	0.0106	2.6400e-003	2.6800e-003	5.3200e-003		114.0033	114.0033	3.2100e-003	0.0181	119.4642
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
Worker	0.0551	0.0393	0.4906	1.1400e-003	0.0258	8.4000e-004	0.0266	8.7600e-003	7.8000e-004	9.5400e-003		115.9867	115.9867	4.2000e-003	3.5700e-003	117.1565
Total	**0.0623**	**0.3967**	**0.5428**	**2.1900e-003**	**0.0336**	**3.6500e-003**	**0.0373**	**0.0114**	**3.4600e-003**	**0.0149**		**229.9900**	**229.9900**	**7.4100e-003**	**0.0216**	**236.6207**

3.8 Demolition Phase II - 2023

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					0.1169	0.0000	0.1169	0.0177	0.0000	0.0177			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280		3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**0.1169**	**0.9975**	**1.1144**	**0.0177**	**0.9280**	**0.9457**		**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Demolition Phase II - 2023

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	4.5900e-003	0.3108	0.0474	1.0100e-003	0.0256	2.1000e-003	0.0277	6.9900e-003	2.0100e-003	9.0000e-003		110.2320	110.2320	3.1200e-003	0.0175	115.5138
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
Worker	0.0513	0.0348	0.4494	1.1100e-003	0.1232	7.9000e-004	0.1240	0.0327	7.3000e-004	0.0334		113.1907	113.1907	3.7800e-003	3.2900e-003	114.2652
Total	**0.0559**	**0.3455**	**0.4968**	**2.1200e-003**	**0.1488**	**2.8900e-003**	**0.1517**	**0.0397**	**2.7400e-003**	**0.0424**		**223.4227**	**223.4227**	**6.9000e-003**	**0.0208**	**229.7790**

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					0.0500	0.0000	0.0500	7.9600e-003	0.0000	7.9600e-003			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**0.0500**	**0.9975**	**1.0475**	**7.9600e-003**	**0.9280**	**0.9360**	**0.0000**	**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Demolition Phase II - 2023

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	4.5900e-003	0.3108	0.0474	1.0100e-003	7.8400e-003	2.1000e-003	9.9400e-003	2.6400e-003	2.0100e-003	4.6500e-003		110.2320	110.2320	3.1200e-003	0.0175	115.5138
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
Worker	0.0513	0.0348	0.4494	1.1100e-003	0.0258	7.9000e-004	0.0266	8.7600e-003	7.3000e-004	9.5000e-003		113.1907	113.1907	3.7800e-003	3.2900e-003	114.2652
Total	**0.0559**	**0.3455**	**0.4968**	**2.1200e-003**	**0.0336**	**2.8900e-003**	**0.0365**	**0.0114**	**2.7400e-003**	**0.0142**		**223.4227**	**223.4227**	**6.9000e-003**	**0.0208**	**229.7790**

3.9 Site Preparation Phase II - 2023

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					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.6570**	**1.2660**	**20.9230**	**10.1025**	**1.1647**	**11.2672**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Site Preparation Phase II - 2023

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	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
Worker	0.0616	0.0417	0.5393	1.3300e-003	0.1479	9.5000e-004	0.1488	0.0392	8.8000e-004	0.0401		135.8289	135.8289	4.5300e-003	3.9500e-003	137.1183
Total	**0.0616**	**0.0417**	**0.5393**	**1.3300e-003**	**0.1479**	**9.5000e-004**	**0.1488**	**0.0392**	**8.8000e-004**	**0.0401**		**135.8289**	**135.8289**	**4.5300e-003**	**3.9500e-003**	**137.1183**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.4034	0.0000	8.4034	4.5461	0.0000	4.5461			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**8.4034**	**1.2660**	**9.6694**	**4.5461**	**1.1647**	**5.7108**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Site Preparation Phase II - 2023

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	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
Worker	0.0616	0.0417	0.5393	1.3300e-003	0.0309	9.5000e-004	0.0319	0.0105	8.8000e-004	0.0114		135.8289	135.8289	4.5300e-003	3.9500e-003	137.1183
Total	**0.0616**	**0.0417**	**0.5393**	**1.3300e-003**	**0.0309**	**9.5000e-004**	**0.0319**	**0.0105**	**8.8000e-004**	**0.0114**		**135.8289**	**135.8289**	**4.5300e-003**	**3.9500e-003**	**137.1183**

3.10 Grading Phase II - 2023

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					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129		2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**7.0826**	**0.7749**	**7.8575**	**3.4247**	**0.7129**	**4.1377**		**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.10 Grading Phase II - 2023

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	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
Worker	0.0513	0.0348	0.4494	1.1100e-003	0.1232	7.9000e-004	0.1240	0.0327	7.3000e-004	0.0334		113.1907	113.1907	3.7800e-003	3.2900e-003	114.2652
Total	**0.0513**	**0.0348**	**0.4494**	**1.1100e-003**	**0.1232**	**7.9000e-004**	**0.1240**	**0.0327**	**7.3000e-004**	**0.0334**		**113.1907**	**113.1907**	**3.7800e-003**	**3.2900e-003**	**114.2652**

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					3.0278	0.0000	3.0278	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129	0.0000	2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**3.0278**	**0.7749**	**3.8027**	**1.5411**	**0.7129**	**2.2541**	**0.0000**	**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.10 Grading Phase II - 2023

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	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
Worker	0.0513	0.0348	0.4494	1.1100e-003	0.0258	7.9000e-004	0.0266	8.7600e-003	7.3000e-004	9.5000e-003		113.1907	113.1907	3.7800e-003	3.2900e-003	114.2652
Total	**0.0513**	**0.0348**	**0.4494**	**1.1100e-003**	**0.0258**	**7.9000e-004**	**0.0266**	**8.7600e-003**	**7.3000e-004**	**9.5000e-003**		**113.1907**	**113.1907**	**3.7800e-003**	**3.2900e-003**	**114.2652**

3.11 Building Construction Phase II - 2023

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Building Construction Phase II - 2023

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	0.0000
Vendor	0.1600	6.8621	1.5672	0.0240	0.7423	0.0394	0.7817	0.2135	0.0377	0.2512		2,578.8189	2,578.8189	0.0488	0.3878	2,695.5926
Worker	2.5156	1.7031	22.0195	0.0542	6.0379	0.0390	6.0768	1.6015	0.0359	1.6375		5,546.3454	5,546.3454	0.1850	0.1612	5,598.9961
Total	**2.6756**	**8.5652**	**23.5867**	**0.0782**	**6.7801**	**0.0784**	**6.8585**	**1.8150**	**0.0737**	**1.8887**		**8,125.1644**	**8,125.1644**	**0.2338**	**0.5489**	**8,294.5887**

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Building Construction Phase II - 2023

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	0.0000
Vendor	0.1600	6.8621	1.5672	0.0240	0.2592	0.0394	0.2987	0.0949	0.0377	0.1326		2,578.8189	2,578.8189	0.0488	0.3878	2,695.5926
Worker	2.5156	1.7031	22.0195	0.0542	1.2627	0.0390	1.3016	0.4294	0.0359	0.4654		5,546.3454	5,546.3454	0.1850	0.1612	5,598.9961
Total	**2.6756**	**8.5652**	**23.5867**	**0.0782**	**1.5219**	**0.0784**	**1.6003**	**0.5243**	**0.0737**	**0.5980**		**8,125.1644**	**8,125.1644**	**0.2338**	**0.5489**	**8,294.5887**

3.11 Building Construction Phase II - 2024

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Building Construction Phase II - 2024

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	0.0000
Vendor	0.1525	6.6426	1.5219	0.0236	0.7423	0.0382	0.7805	0.2135	0.0366	0.2501		2,534.1059	2,534.1059	0.0484	0.3809	2,648.8312
Worker	2.3507	1.5137	20.3152	0.0525	6.0379	0.0368	6.0746	1.6015	0.0339	1.6354		5,417.3227	5,417.3227	0.1669	0.1490	5,465.9075
Total	**2.5032**	**8.1563**	**21.8370**	**0.0761**	**6.7802**	**0.0750**	**6.8552**	**1.8150**	**0.0705**	**1.8855**		**7,951.4286**	**7,951.4286**	**0.2153**	**0.5300**	**8,114.7386**

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Building Construction Phase II - 2024

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	0.0000
Vendor	0.1525	6.6426	1.5219	0.0236	0.2593	0.0382	0.2975	0.0949	0.0366	0.1315		2,534.1059	2,534.1059	0.0484	0.3809	2,648.8312
Worker	2.3507	1.5137	20.3152	0.0525	1.2627	0.0368	1.2995	0.4294	0.0339	0.4634		5,417.3227	5,417.3227	0.1669	0.1490	5,465.9075
Total	**2.5032**	**8.1563**	**21.8370**	**0.0761**	**1.5219**	**0.0750**	**1.5969**	**0.5244**	**0.0705**	**0.5949**		**7,951.4286**	**7,951.4286**	**0.2153**	**0.5300**	**8,114.7386**

3.11 Building Construction Phase II - 2025

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Building Construction Phase II - 2025

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	0.0000
Vendor	0.1456	6.4201	1.4854	0.0232	0.7424	0.0368	0.7791	0.2135	0.0352	0.2487		2,486.8618	2,486.8618	0.0481	0.3737	2,599.4126
Worker	2.2069	1.3547	18.8523	0.0508	6.0379	0.0349	6.0728	1.6015	0.0322	1.6337		5,295.7563	5,295.7563	0.1510	0.1386	5,340.8249
Total	**2.3525**	**7.7748**	**20.3378**	**0.0740**	**6.7802**	**0.0717**	**6.8519**	**1.8150**	**0.0674**	**1.8825**		**7,782.6181**	**7,782.6181**	**0.1990**	**0.5122**	**7,940.2375**

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Building Construction Phase II - 2025

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	0.0000
Vendor	0.1456	6.4201	1.4854	0.0232	0.2593	0.0368	0.2961	0.0950	0.0352	0.1301		2,486.8618	2,486.8618	0.0481	0.3737	2,599.4126
Worker	2.2069	1.3547	18.8523	0.0508	1.2627	0.0349	1.2976	0.4294	0.0322	0.4616		5,295.7563	5,295.7563	0.1510	0.1386	5,340.8249
Total	**2.3525**	**7.7748**	**20.3378**	**0.0740**	**1.5220**	**0.0717**	**1.5937**	**0.5244**	**0.0674**	**0.5918**		**7,782.6181**	**7,782.6181**	**0.1990**	**0.5122**	**7,940.2375**

3.12 Architectural Coating Phase II - 2023

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	1.3253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**1.5170**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.12 Architectural Coating Phase II - 2023

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	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
Worker	0.5031	0.3406	4.4039	0.0108	1.2076	7.7900e-003	1.2154	0.3203	7.1900e-003	0.3275		1,109.2691	1,109.2691	0.0370	0.0322	1,119.7992
Total	**0.5031**	**0.3406**	**4.4039**	**0.0108**	**1.2076**	**7.7900e-003**	**1.2154**	**0.3203**	**7.1900e-003**	**0.3275**		**1,109.2691**	**1,109.2691**	**0.0370**	**0.0322**	**1,119.7992**

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	1.3253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**1.5170**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.12 Architectural Coating Phase II - 2023

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	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
Worker	0.5031	0.3406	4.4039	0.0108	0.2525	7.7900e-003	0.2603	0.0859	7.1900e-003	0.0931		1,109.2691	1,109.2691	0.0370	0.0322	1,119.7992
Total	**0.5031**	**0.3406**	**4.4039**	**0.0108**	**0.2525**	**7.7900e-003**	**0.2603**	**0.0859**	**7.1900e-003**	**0.0931**		**1,109.2691**	**1,109.2691**	**0.0370**	**0.0322**	**1,119.7992**

3.12 Architectural Coating Phase II - 2024

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	1.3253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**1.5061**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.12 Architectural Coating Phase II - 2024

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	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
Worker	0.4701	0.3027	4.0630	0.0105	1.2076	7.3600e-003	1.2149	0.3203	6.7800e-003	0.3271		1,083.4645	1,083.4645	0.0334	0.0298	1,093.1815
Total	**0.4701**	**0.3027**	**4.0630**	**0.0105**	**1.2076**	**7.3600e-003**	**1.2149**	**0.3203**	**6.7800e-003**	**0.3271**		**1,083.4645**	**1,083.4645**	**0.0334**	**0.0298**	**1,093.1815**

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	1.3253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**1.5061**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.12 Architectural Coating Phase II - 2024

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	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
Worker	0.4701	0.3027	4.0630	0.0105	0.2525	7.3600e-003	0.2599	0.0859	6.7800e-003	0.0927		1,083.4645	1,083.4645	0.0334	0.0298	1,093.1815
Total	**0.4701**	**0.3027**	**4.0630**	**0.0105**	**0.2525**	**7.3600e-003**	**0.2599**	**0.0859**	**6.7800e-003**	**0.0927**		**1,083.4645**	**1,083.4645**	**0.0334**	**0.0298**	**1,093.1815**

3.12 Architectural Coating Phase II - 2025

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	1.3253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**1.4962**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.12 Architectural Coating Phase II - 2025

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	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
Worker	0.4414	0.2709	3.7705	0.0102	1.2076	6.9900e-003	1.2146	0.3203	6.4400e-003	0.3268		1,059.1513	1,059.1513	0.0302	0.0277	1,068.1650
Total	**0.4414**	**0.2709**	**3.7705**	**0.0102**	**1.2076**	**6.9900e-003**	**1.2146**	**0.3203**	**6.4400e-003**	**0.3268**		**1,059.1513**	**1,059.1513**	**0.0302**	**0.0277**	**1,068.1650**

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	1.3253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**1.4962**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

3.12 Architectural Coating Phase II - 2025

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	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
Worker	0.4414	0.2709	3.7705	0.0102	0.2525	6.9900e-003	0.2595	0.0859	6.4400e-003	0.0923		1,059.1513	1,059.1513	0.0302	0.0277	1,068.1650
Total	**0.4414**	**0.2709**	**3.7705**	**0.0102**	**0.2525**	**6.9900e-003**	**0.2595**	**0.0859**	**6.4400e-003**	**0.0923**		**1,059.1513**	**1,059.1513**	**0.0302**	**0.0277**	**1,068.1650**

3.13 Paving Phase II - 2025

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	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.13 Paving Phase II - 2025

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	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
Worker	0.0450	0.0277	0.3847	1.0400e-003	0.1232	7.1000e-004	0.1239	0.0327	6.6000e-004	0.0333		108.0767	108.0767	3.0800e-003	2.8300e-003	108.9964
Total	**0.0450**	**0.0277**	**0.3847**	**1.0400e-003**	**0.1232**	**7.1000e-004**	**0.1239**	**0.0327**	**6.6000e-004**	**0.0333**		**108.0767**	**108.0767**	**3.0800e-003**	**2.8300e-003**	**108.9964**

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	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.13 Paving Phase II - 2025

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	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
Worker	0.0450	0.0277	0.3847	1.0400e-003	0.0258	7.1000e-004	0.0265	8.7600e-003	6.6000e-004	9.4200e-003		108.0767	108.0767	3.0800e-003	2.8300e-003	108.9964
Total	**0.0450**	**0.0277**	**0.3847**	**1.0400e-003**	**0.0258**	**7.1000e-004**	**0.0265**	**8.7600e-003**	**6.6000e-004**	**9.4200e-003**		**108.0767**	**108.0767**	**3.0800e-003**	**2.8300e-003**	**108.9964**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.0989	4.2232	34.9730	0.0645	6.7738	0.0570	6.8307	1.8051	0.0532	1.8583		6,733.4959	6,733.4959	0.5211	0.3083	6,838.4017
Unmitigated	4.0989	4.2232	34.9730	0.0645	6.7738	0.0570	6.8307	1.8051	0.0532	1.8583		6,733.4959	6,733.4959	0.5211	0.3083	6,838.4017

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,116.50	1,116.50	0.00	2,757,011	2,757,011
Library	0.00	0.00	0.00		
Total	1,116.50	1,116.50	0.00	2,757,011	2,757,011

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
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.519141	0.056504	0.203851	0.131576	0.027298	0.006193	0.011024	0.003918	0.000708	0.000836	0.033532	0.001100	0.004319
Library	0.519141	0.056504	0.203851	0.131576	0.027298	0.006193	0.011024	0.003918	0.000708	0.000836	0.033532	0.001100	0.004319

5.0 Energy Detail

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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					
Apartments Mid Rise	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
Library	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					
Apartments Mid Rise	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
Library	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

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	5.6261	0.9637	83.6604	4.4200e-003		0.4642	0.4642		0.4642	0.4642	0.0000	150.7825	150.7825	0.1444	0.0000	154.3924
Unmitigated	5.6261	0.9637	83.6604	4.4200e-003		0.4642	0.4642		0.4642	0.4642	0.0000	150.7825	150.7825	0.1444	0.0000	154.3924

UCSC Kresge EIR Addendum - Santa Cruz County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.2273					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.8869					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.5119	0.9637	83.6604	4.4200e-003		0.4642	0.4642		0.4642	0.4642		150.7825	150.7825	0.1444		154.3924
Total	**5.6261**	**0.9637**	**83.6604**	**4.4200e-003**		**0.4642**	**0.4642**		**0.4642**	**0.4642**	**0.0000**	**150.7825**	**150.7825**	**0.1444**	**0.0000**	**154.3924**

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					
Architectural Coating	0.2273					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.8869					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.5119	0.9637	83.6604	4.4200e-003		0.4642	0.4642		0.4642	0.4642		150.7825	150.7825	0.1444		154.3924
Total	**5.6261**	**0.9637**	**83.6604**	**4.4200e-003**		**0.4642**	**0.4642**		**0.4642**	**0.4642**	**0.0000**	**150.7825**	**150.7825**	**0.1444**	**0.0000**	**154.3924**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

UCSC Kresge EIR Addendum - Santa Cruz County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

UCSC Kresge EIR Addendum

Santa Cruz County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Library	8.90	1000sqft	0.00	8,900.00	0
Apartments Mid Rise	1,015.00	Dwelling Unit	8.00	126,000.00	1015

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	1.8	**Precipitation Freq (Days)**	61
Climate Zone	5			**Operational Year**	2025
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Library land uses accounts for academic, student support, and town hall uses (8,900sf). The apartment mid-rise are account for all beds and the square footage for apartments + cafe (46,000+80,000 sf)

Construction Phase - Applicant provided schedule. This is a two phased construction (Phase I and Phase II) on a 6 day/week schedule

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Default equipment for all phases

Off-road Equipment -

Off-road Equipment -

UCSC Kresge EIR Addendum - Santa Cruz County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Demolition waste equals 3,182 cubic yards . Split the waste removal with same percentage as building demo (Phase I=70% and Phase II= 30%). Phase I = 2,227 cy and Phase II = 955 cy. Added on top of building demo haul trips

Demolition - Building Square footage to be demolished = 51,670 sf . Split the total similar to the original EIR with 70% in Phase I and 30% in Phase II.

Grading - There would no net export of soil from the University instead of exporting the University will use soil for on-campus purposes.

Architectural Coating - Pursuant with MBARD Rule 476, the architectural coating rate would be 50 g/L

Vehicle Trips - Cumulative Conditions with Kresge College scenario = 25,378 trips. Modified trip gen rates using the daily trips, assuming trips would be similar for University/College ITE where there are only weekday and sat trips.

Woodstoves - No woodstoves or hearths in proposed residences

Area Coating - Pursuant with MBARD Rule 476, the architectural coating rate would be 50 g/L

Water And Wastewater - Water and wastewater is treated at the City of Santa Cruz Public Works Wastewater System, 100% aerobic https://www.cityofsantacruz.com/government/city-departments/public-works/wastewater-treatment-facility

Solid Waste - Campus Net 0 Waste by 2020 - 90% reduction. Reduced the default tons/year estimate by 90%

Construction Off-road Equipment Mitigation - 205 LRDP MM AIR-1. Soil Stabilizer, clean road, and ground cover

Area Mitigation -

Energy Mitigation - Exceed the Title 24 standards by 20%

Water Mitigation - 20% indoor water reduction pursuant with CalGreen

Energy Use - Natural gas zeroed to account for UCSC energy policies

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	150.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblArchitecturalCoating	EF_Residential_Interior	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	50
tblAreaCoating	Area_EF_Nonresidential_Interior	150	50
tblAreaCoating	Area_EF_Residential_Exterior	100	50
tblAreaCoating	Area_EF_Residential_Interior	100	50
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	91
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	626.00
tblConstructionPhase	NumDays	20.00	210.00
tblConstructionPhase	NumDays	230.00	784.00
tblConstructionPhase	NumDays	230.00	886.00
tblConstructionPhase	NumDays	20.00	157.00
tblConstructionPhase	NumDays	20.00	129.00
tblConstructionPhase	NumDays	20.00	209.00
tblConstructionPhase	NumDays	20.00	155.00
tblConstructionPhase	NumDays	20.00	131.00
tblConstructionPhase	NumDays	20.00	53.00
tblConstructionPhase	NumDays	10.00	130.00
tblConstructionPhase	NumDays	10.00	129.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblEnergyUse	NT24NG	2,615.00	0.00
tblEnergyUse	NT24NG	6.90	0.00
tblEnergyUse	T24NG	5,828.01	0.00
tblEnergyUse	T24NG	17.67	0.00
tblFireplaces	NumberGas	1,015.00	0.00
tblLandUse	LandUseSquareFeet	1,015,000.00	126,000.00
tblLandUse	LotAcreage	0.20	0.00
tblLandUse	LotAcreage	26.71	8.00
tblLandUse	Population	2,903.00	1,015.00
tblTripsAndVMT	HaulingTripNumber	165.00	443.00
tblTripsAndVMT	HaulingTripNumber	71.00	190.00
tblVehicleTrips	ST_TR	4.91	1.10
tblVehicleTrips	ST_TR	80.09	0.00
tblVehicleTrips	SU_TR	4.09	0.00
tblVehicleTrips	SU_TR	42.09	0.00
tblVehicleTrips	WD_TR	5.44	1.10
tblVehicleTrips	WD_TR	72.05	0.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

UCSC Kresge EIR Addendum - Santa Cruz County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	8.0491	82.4889	45.7344	0.0815	20.2012	4.2027	24.4038	10.2217	3.8854	14.1071	0.0000	8,078.8414	8,078.8414	2.2747	0.0488	8,150.2322
2020	16.0319	136.2961	109.7730	0.2216	34.1869	6.4670	40.6539	15.4940	5.9946	21.4886	0.0000	21,954.1735	21,954.1735	4.1737	0.7146	22,271.4514
2021	5.4323	30.0218	45.3593	0.1075	6.7800	1.1362	7.9162	1.8150	1.0697	2.8846	0.0000	10,867.6371	10,867.6371	0.9324	0.6337	11,079.7856
2022	10.7886	39.5044	64.2526	0.1428	8.1109	1.9051	9.6988	2.1680	1.7713	3.6553	0.0000	14,352.8025	14,352.8025	1.8437	0.6492	14,588.2639
2023	11.2722	91.0776	94.2866	0.2139	34.0565	3.8215	37.8780	15.4715	3.5424	19.0139	0.0000	21,212.2283	21,212.2283	4.0531	0.6120	21,493.6655
2024	6.1854	23.8601	44.3000	0.1139	7.9877	0.7569	8.7446	2.1353	0.7153	2.8507	0.0000	11,600.4236	11,600.4236	0.8952	0.5883	11,798.1082
2025	6.8479	30.9603	57.4316	0.1353	8.1110	1.0773	9.1883	2.1680	1.0075	3.1756	0.0000	13,725.2948	13,725.2948	1.5872	0.5697	13,934.7380
Maximum	**16.0319**	**136.2961**	**109.7730**	**0.2216**	**34.1869**	**6.4670**	**40.6539**	**15.4940**	**5.9946**	**21.4886**	**0.0000**	**21,954.1735**	**21,954.1735**	**4.1737**	**0.7146**	**22,271.4514**

UCSC Kresge EIR Addendum - Santa Cruz County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	8.0491	82.4889	45.7344	0.0815	8.5709	4.2027	12.7736	4.5857	3.8854	8.4711	0.0000	8,078.8414	8,078.8414	2.2747	0.0488	8,150.2322
2020	16.0319	136.2961	109.7730	0.2216	13.1462	6.4670	19.6132	6.6599	5.9946	12.6545	0.0000	21,954.1735	21,954.1735	4.1737	0.7146	22,271.4513
2021	5.4323	30.0218	45.3593	0.1075	1.5218	1.1362	2.6579	0.5243	1.0697	1.5940	0.0000	10,867.6371	10,867.6371	0.9324	0.6337	11,079.7856
2022	10.7886	39.5044	64.2526	0.1428	1.8001	1.9051	3.3880	0.6190	1.7713	2.1063	0.0000	14,352.8025	14,352.8025	1.8437	0.6492	14,588.2639
2023	11.2722	91.0776	94.2866	0.2139	13.0933	3.8215	16.9148	6.6502	3.5424	10.1926	0.0000	21,212.2282	21,212.2282	4.0531	0.6120	21,493.6654
2024	6.1854	23.8601	44.3000	0.1139	1.7744	0.7569	2.5313	0.6103	0.7153	1.3256	0.0000	11,600.4236	11,600.4236	0.8952	0.5883	11,798.1082
2025	6.8479	30.9603	57.4316	0.1353	1.8003	1.0773	2.8775	0.6190	1.0075	1.6266	0.0000	13,725.2948	13,725.2948	1.5872	0.5697	13,934.7380
Maximum	**16.0319**	**136.2961**	**109.7730**	**0.2216**	**13.1462**	**6.4670**	**19.6132**	**6.6599**	**5.9946**	**12.6545**	**0.0000**	**21,954.1735**	**21,954.1735**	**4.1737**	**0.7146**	**22,271.4513**

	ROG	NOx	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**	**65.08**	**0.00**	**56.13**	**59.03**	**0.00**	**43.48**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

UCSC Kresge EIR Addendum - Santa Cruz County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	5.6261	0.9637	83.6604	4.4200e-003		0.4642	0.4642		0.4642	0.4642	0.0000	150.7825	150.7825	0.1444	0.0000	154.3924
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	4.0021	4.8368	38.7205	0.0624	6.7738	0.0570	6.8307	1.8051	0.0532	1.8583		6,517.7515	6,517.7515	0.5812	0.3395	6,633.4562
Total	**9.6282**	**5.8005**	**122.3809**	**0.0668**	**6.7738**	**0.5212**	**7.2949**	**1.8051**	**0.5174**	**2.3225**	**0.0000**	**6,668.5340**	**6,668.5340**	**0.7256**	**0.3395**	**6,787.8486**

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	5.6261	0.9637	83.6604	4.4200e-003		0.4642	0.4642		0.4642	0.4642	0.0000	150.7825	150.7825	0.1444	0.0000	154.3924
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	4.0021	4.8368	38.7205	0.0624	6.7738	0.0570	6.8307	1.8051	0.0532	1.8583		6,517.7515	6,517.7515	0.5812	0.3395	6,633.4562
Total	**9.6282**	**5.8005**	**122.3809**	**0.0668**	**6.7738**	**0.5212**	**7.2949**	**1.8051**	**0.5174**	**2.3225**	**0.0000**	**6,668.5340**	**6,668.5340**	**0.7256**	**0.3395**	**6,787.8486**

UCSC Kresge EIR Addendum - Santa Cruz County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	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 Phase I	Demolition	10/1/2019	3/31/2020	6	157	
2	Site Preparation Phase I	Site Preparation	11/1/2019	3/31/2020	6	130	
3	Grading Phase I	Grading	1/1/2020	8/31/2020	6	209	
4	Building Construction Phase I	Building Construction	2/1/2020	11/30/2022	6	886	
5	Architectural Coating Phase I	Architectural Coating	5/1/2022	12/31/2022	6	210	
6	Paving Phase I	Paving	11/1/2022	12/31/2022	6	53	
7	Demolition Phase II	Demolition	12/1/2022	4/30/2023	6	129	
8	Site Preparation Phase II	Site Preparation	1/1/2023	5/31/2023	6	129	
9	Grading Phase II	Grading	1/1/2023	6/30/2023	6	155	
10	Building Construction Phase II	Building Construction	3/1/2023	8/31/2025	6	784	
11	Architectural Coating Phase II	Architectural Coating	9/1/2023	8/31/2025	6	626	
12	Paving Phase II	Paving	4/1/2025	8/31/2025	6	131	

Acres of Grading (Site Preparation Phase): 195

Acres of Grading (Grading Phase): 209

Acres of Paving: 0

Residential Indoor: 255,150; Residential Outdoor: 85,050; Non-Residential Indoor: 13,350; Non-Residential Outdoor: 4,450; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

UCSC Kresge EIR Addendum - Santa Cruz County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition Phase I	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition Phase I	Excavators	3	8.00	158	0.38
Demolition Phase I	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation Phase I	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation Phase I	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading Phase I	Excavators	1	8.00	158	0.38
Grading Phase I	Graders	1	8.00	187	0.41
Grading Phase I	Rubber Tired Dozers	1	8.00	247	0.40
Grading Phase I	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction Phase I	Cranes	1	7.00	231	0.29
Building Construction Phase I	Forklifts	3	8.00	89	0.20
Building Construction Phase I	Generator Sets	1	8.00	84	0.74
Building Construction Phase I	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction Phase I	Welders	1	8.00	46	0.45
Architectural Coating Phase I	Air Compressors	1	6.00	78	0.48
Paving Phase I	Pavers	2	8.00	130	0.42
Paving Phase I	Paving Equipment	2	8.00	132	0.36
Paving Phase I	Rollers	2	8.00	80	0.38
Demolition Phase II	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition Phase II	Excavators	3	8.00	158	0.38
Demolition Phase II	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation Phase II	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation Phase II	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading Phase II	Excavators	1	8.00	158	0.38
Grading Phase II	Graders	1	8.00	187	0.41
Grading Phase II	Rubber Tired Dozers	1	8.00	247	0.40
Grading Phase II	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction Phase II	Cranes	1	7.00	231	0.29

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction Phase II	Forklifts	3	8.00	89	0.20
Building Construction Phase II	Generator Sets	1	8.00	84	0.74
Building Construction Phase II	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction Phase II	Welders	1	8.00	46	0.45
Architectural Coating Phase II	Air Compressors	1	6.00	78	0.48
Paving Phase II	Pavers	2	8.00	130	0.42
Paving Phase II	Paving Equipment	2	8.00	132	0.36
Paving Phase II	Rollers	2	8.00	80	0.38

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 Phase I	6	15.00	0.00	443.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation Phase I	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading Phase I	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction Phase I	9	735.00	110.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating Phase I	1	147.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving Phase I	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition Phase II	6	15.00	0.00	190.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation Phase II	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading Phase II	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction Phase II	9	735.00	110.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating Phase II	1	147.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving Phase II	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition Phase I - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2241	0.0000	0.2241	0.0339	0.0000	0.0339			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697		3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.2241**	**1.7949**	**2.0190**	**0.0339**	**1.6697**	**1.7036**		**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition Phase I - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0356	0.9740	0.1584	2.1400e-003	0.0490	0.0153	0.0642	0.0134	0.0146	0.0280		232.1909	232.1909	6.7600e-003	0.0368	243.3130
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
Worker	0.0751	0.0724	0.6605	1.1800e-003	0.1232	9.9000e-004	0.1242	0.0327	9.2000e-004	0.0336		119.6810	119.6810	6.5400e-003	5.4500e-003	121.4680
Total	**0.1107**	**1.0464**	**0.8188**	**3.3200e-003**	**0.1722**	**0.0162**	**0.1884**	**0.0461**	**0.0155**	**0.0616**		**351.8719**	**351.8719**	**0.0133**	**0.0422**	**364.7810**

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					0.0958	0.0000	0.0958	0.0153	0.0000	0.0153			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697	0.0000	3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.0958**	**1.7949**	**1.8907**	**0.0153**	**1.6697**	**1.6849**	**0.0000**	**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition Phase I - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0356	0.9740	0.1584	2.1400e-003	0.0150	0.0153	0.0303	5.0500e-003	0.0146	0.0196		232.1909	232.1909	6.7600e-003	0.0368	243.3130
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
Worker	0.0751	0.0724	0.6605	1.1800e-003	0.0258	9.9000e-004	0.0268	8.7600e-003	9.2000e-004	9.6800e-003		119.6810	119.6810	6.5400e-003	5.4500e-003	121.4680
Total	**0.1107**	**1.0464**	**0.8188**	**3.3200e-003**	**0.0408**	**0.0162**	**0.0570**	**0.0138**	**0.0155**	**0.0293**		**351.8719**	**351.8719**	**0.0133**	**0.0422**	**364.7810**

3.2 Demolition Phase I - 2020

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					0.2241	0.0000	0.2241	0.0339	0.0000	0.0339			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.2241**	**1.6587**	**1.8828**	**0.0339**	**1.5419**	**1.5758**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition Phase I - 2020

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	0.0231	0.8923	0.1230	2.1100e-003	0.0490	9.6500e-003	0.0586	0.0134	9.2300e-003	0.0226		228.7779	228.7779	6.3700e-003	0.0362	239.7316
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
Worker	0.0688	0.0630	0.5935	1.1500e-003	0.1232	9.4000e-004	0.1242	0.0327	8.7000e-004	0.0336		116.5407	116.5407	5.8100e-003	4.9400e-003	118.1580
Total	**0.0919**	**0.9554**	**0.7165**	**3.2600e-003**	**0.1722**	**0.0106**	**0.1828**	**0.0461**	**0.0101**	**0.0562**		**345.3186**	**345.3186**	**0.0122**	**0.0412**	**357.8896**

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					0.0958	0.0000	0.0958	0.0153	0.0000	0.0153			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**0.0958**	**1.6587**	**1.7545**	**0.0153**	**1.5419**	**1.5571**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition Phase I - 2020

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	0.0231	0.8923	0.1230	2.1100e-003	0.0150	9.6500e-003	0.0247	5.0500e-003	9.2300e-003	0.0143		228.7779	228.7779	6.3700e-003	0.0362	239.7316
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
Worker	0.0688	0.0630	0.5935	1.1500e-003	0.0258	9.4000e-004	0.0267	8.7600e-003	8.7000e-004	9.6300e-003		116.5407	116.5407	5.8100e-003	4.9400e-003	118.1580
Total	**0.0919**	**0.9554**	**0.7165**	**3.2600e-003**	**0.0408**	**0.0106**	**0.0514**	**0.0138**	**0.0101**	**0.0239**		**345.3186**	**345.3186**	**0.0122**	**0.0412**	**357.8896**

3.3 Site Preparation Phase I - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**19.6570**	**2.3904**	**22.0474**	**10.1025**	**2.1991**	**12.3016**		**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation Phase I - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	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
Worker	0.0901	0.0869	0.7926	1.4200e-003	0.1479	1.1900e-003	0.1491	0.0392	1.1000e-003	0.0403		143.6172	143.6172	7.8500e-003	6.5400e-003	145.7616
Total	**0.0901**	**0.0869**	**0.7926**	**1.4200e-003**	**0.1479**	**1.1900e-003**	**0.1491**	**0.0392**	**1.1000e-003**	**0.0403**		**143.6172**	**143.6172**	**7.8500e-003**	**6.5400e-003**	**145.7616**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.4034	0.0000	8.4034	4.5461	0.0000	4.5461			0.0000			0.0000
Off-Road	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**8.4034**	**2.3904**	**10.7937**	**4.5461**	**2.1991**	**6.7452**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation Phase I - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	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
Worker	0.0901	0.0869	0.7926	1.4200e-003	0.0309	1.1900e-003	0.0321	0.0105	1.1000e-003	0.0116		143.6172	143.6172	7.8500e-003	6.5400e-003	145.7616
Total	**0.0901**	**0.0869**	**0.7926**	**1.4200e-003**	**0.0309**	**1.1900e-003**	**0.0321**	**0.0105**	**1.1000e-003**	**0.0116**		**143.6172**	**143.6172**	**7.8500e-003**	**6.5400e-003**	**145.7616**

3.3 Site Preparation Phase I - 2020

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					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**19.6570**	**2.1974**	**21.8544**	**10.1025**	**2.0216**	**12.1241**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation Phase I - 2020

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	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
Worker	0.0825	0.0756	0.7122	1.3800e-003	0.1479	1.1300e-003	0.1490	0.0392	1.0400e-003	0.0403		139.8488	139.8488	6.9800e-003	5.9300e-003	141.7896
Total	**0.0825**	**0.0756**	**0.7122**	**1.3800e-003**	**0.1479**	**1.1300e-003**	**0.1490**	**0.0392**	**1.0400e-003**	**0.0403**		**139.8488**	**139.8488**	**6.9800e-003**	**5.9300e-003**	**141.7896**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.4034	0.0000	8.4034	4.5461	0.0000	4.5461			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**8.4034**	**2.1974**	**10.6008**	**4.5461**	**2.0216**	**6.5677**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation Phase I - 2020

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	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
Worker	0.0825	0.0756	0.7122	1.3800e-003	0.0309	1.1300e-003	0.0321	0.0105	1.0400e-003	0.0116		139.8488	139.8488	6.9800e-003	5.9300e-003	141.7896
Total	**0.0825**	**0.0756**	**0.7122**	**1.3800e-003**	**0.0309**	**1.1300e-003**	**0.0321**	**0.0105**	**1.0400e-003**	**0.0116**		**139.8488**	**139.8488**	**6.9800e-003**	**5.9300e-003**	**141.7896**

3.4 Grading Phase I - 2020

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					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716		2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**7.0826**	**1.2734**	**8.3560**	**3.4247**	**1.1716**	**4.5963**		**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading Phase I - 2020

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	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
Worker	0.0688	0.0630	0.5935	1.1500e-003	0.1232	9.4000e-004	0.1242	0.0327	8.7000e-004	0.0336		116.5407	116.5407	5.8100e-003	4.9400e-003	118.1580
Total	**0.0688**	**0.0630**	**0.5935**	**1.1500e-003**	**0.1232**	**9.4000e-004**	**0.1242**	**0.0327**	**8.7000e-004**	**0.0336**		**116.5407**	**116.5407**	**5.8100e-003**	**4.9400e-003**	**118.1580**

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					3.0278	0.0000	3.0278	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	2.4288	26.3859	16.0530	0.0297		1.2734	1.2734		1.1716	1.1716	0.0000	2,872.4851	2,872.4851	0.9290		2,895.7106
Total	**2.4288**	**26.3859**	**16.0530**	**0.0297**	**3.0278**	**1.2734**	**4.3012**	**1.5411**	**1.1716**	**2.7127**	**0.0000**	**2,872.4851**	**2,872.4851**	**0.9290**		**2,895.7106**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading Phase I - 2020

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	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
Worker	0.0688	0.0630	0.5935	1.1500e-003	0.0258	9.4000e-004	0.0267	8.7600e-003	8.7000e-004	9.6300e-003		116.5407	116.5407	5.8100e-003	4.9400e-003	118.1580
Total	**0.0688**	**0.0630**	**0.5935**	**1.1500e-003**	**0.0258**	**9.4000e-004**	**0.0267**	**8.7600e-003**	**8.7000e-004**	**9.6300e-003**		**116.5407**	**116.5407**	**5.8100e-003**	**4.9400e-003**	**118.1580**

3.5 Building Construction Phase I - 2020

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction Phase I - 2020

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	0.0000
Vendor	0.4812	10.9240	2.5008	0.0260	0.7421	0.1616	0.9037	0.2134	0.1546	0.3680		2,783.6166	2,783.6166	0.0622	0.4205	2,910.4760
Worker	3.3703	3.0879	29.0817	0.0565	6.0379	0.0462	6.0841	1.6015	0.0427	1.6442		5,710.4940	5,710.4940	0.2849	0.2420	5,789.7419
Total	**3.8515**	**14.0119**	**31.5825**	**0.0825**	**6.7800**	**0.2078**	**6.9877**	**1.8150**	**0.1972**	**2.0122**		**8,494.1107**	**8,494.1107**	**0.3471**	**0.6625**	**8,700.2180**

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction Phase I - 2020

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	0.0000
Vendor	0.4812	10.9240	2.5008	0.0260	0.2591	0.1616	0.4206	0.0949	0.1546	0.2494		2,783.6166	2,783.6166	0.0622	0.4205	2,910.4760
Worker	3.3703	3.0879	29.0817	0.0565	1.2627	0.0462	1.3089	0.4294	0.0427	0.4721		5,710.4940	5,710.4940	0.2849	0.2420	5,789.7419
Total	**3.8515**	**14.0119**	**31.5825**	**0.0825**	**1.5217**	**0.2078**	**1.7295**	**0.5243**	**0.1972**	**0.7215**		**8,494.1107**	**8,494.1107**	**0.3471**	**0.6625**	**8,700.2180**

3.5 Building Construction Phase I - 2021

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

UCSC Kresge EIR Addendum - Santa Cruz County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction Phase I - 2021

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	0.0000
Vendor	0.4057	9.8770	2.2734	0.0255	0.7422	0.1336	0.8757	0.2134	0.1278	0.3412		2,734.2094	2,734.2094	0.0593	0.4127	2,858.6620
Worker	3.1257	2.7126	26.5107	0.0551	6.0379	0.0440	6.0818	1.6015	0.0406	1.6421		5,580.0638	5,580.0638	0.2571	0.2210	5,652.3593
Total	**3.5314**	**12.5897**	**28.7841**	**0.0806**	**6.7800**	**0.1776**	**6.9576**	**1.8150**	**0.1684**	**1.9834**		**8,314.2732**	**8,314.2732**	**0.3164**	**0.6337**	**8,511.0213**

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	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

UCSC Kresge EIR Addendum - Santa Cruz County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction Phase I - 2021

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	0.0000
Vendor	0.4057	9.8770	2.2734	0.0255	0.2591	0.1336	0.3927	0.0949	0.1278	0.2227		2,734.2094	2,734.2094	0.0593	0.4127	2,858.6620
Worker	3.1257	2.7126	26.5107	0.0551	1.2627	0.0440	1.3067	0.4294	0.0406	0.4700		5,580.0638	5,580.0638	0.2571	0.2210	5,652.3593
Total	**3.5314**	**12.5897**	**28.7841**	**0.0806**	**1.5218**	**0.1776**	**1.6993**	**0.5243**	**0.1684**	**0.6927**		**8,314.2732**	**8,314.2732**	**0.3164**	**0.6337**	**8,511.0213**

3.5 Building Construction Phase I - 2022

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction Phase I - 2022

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	0.0000
Vendor	0.2716	8.4376	1.9128	0.0249	0.7422	0.0788	0.8210	0.2135	0.0754	0.2888		2,666.3560	2,666.3560	0.0534	0.4020	2,787.4718
Worker	2.9110	2.3908	24.2397	0.0535	6.0379	0.0414	6.0792	1.6015	0.0382	1.6397		5,443.2646	5,443.2646	0.2316	0.2026	5,509.4219
Total	**3.1826**	**10.8285**	**26.1525**	**0.0784**	**6.7801**	**0.1202**	**6.9002**	**1.8150**	**0.1136**	**1.9285**		**8,109.6206**	**8,109.6206**	**0.2850**	**0.6045**	**8,296.8936**

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	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction Phase I - 2022

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	0.0000
Vendor	0.2716	8.4376	1.9128	0.0249	0.2592	0.0788	0.3379	0.0949	0.0754	0.1703		2,666.3560	2,666.3560	0.0534	0.4020	2,787.4718
Worker	2.9110	2.3908	24.2397	0.0535	1.2627	0.0414	1.3041	0.4294	0.0382	0.4676		5,443.2646	5,443.2646	0.2316	0.2026	5,509.4219
Total	**3.1826**	**10.8285**	**26.1525**	**0.0784**	**1.5218**	**0.1202**	**1.6420**	**0.5243**	**0.1136**	**0.6379**		**8,109.6206**	**8,109.6206**	**0.2850**	**0.6045**	**8,296.8936**

3.6 Architectural Coating Phase I - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.9508					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**4.1553**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating Phase I - 2022

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	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
Worker	0.5822	0.4782	4.8479	0.0107	1.2076	8.2800e-003	1.2159	0.3203	7.6400e-003	0.3279		1,088.6529	1,088.6529	0.0463	0.0405	1,101.8844
Total	**0.5822**	**0.4782**	**4.8479**	**0.0107**	**1.2076**	**8.2800e-003**	**1.2159**	**0.3203**	**7.6400e-003**	**0.3279**		**1,088.6529**	**1,088.6529**	**0.0463**	**0.0405**	**1,101.8844**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.9508					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**4.1553**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating Phase I - 2022

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	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
Worker	0.5822	0.4782	4.8479	0.0107	0.2525	8.2800e-003	0.2608	0.0859	7.6400e-003	0.0935		1,088.6529	1,088.6529	0.0463	0.0405	1,101.8844
Total	**0.5822**	**0.4782**	**4.8479**	**0.0107**	**0.2525**	**8.2800e-003**	**0.2608**	**0.0859**	**7.6400e-003**	**0.0935**		**1,088.6529**	**1,088.6529**	**0.0463**	**0.0405**	**1,101.8844**

3.7 Paving Phase I - 2022

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Paving Phase I - 2022

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	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
Worker	0.0594	0.0488	0.4947	1.0900e-003	0.1232	8.4000e-004	0.1241	0.0327	7.8000e-004	0.0335		111.0870	111.0870	4.7300e-003	4.1300e-003	112.4372
Total	**0.0594**	**0.0488**	**0.4947**	**1.0900e-003**	**0.1232**	**8.4000e-004**	**0.1241**	**0.0327**	**7.8000e-004**	**0.0335**		**111.0870**	**111.0870**	**4.7300e-003**	**4.1300e-003**	**112.4372**

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	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Paving Phase I - 2022

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	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
Worker	0.0594	0.0488	0.4947	1.0900e-003	0.0258	8.4000e-004	0.0266	8.7600e-003	7.8000e-004	9.5400e-003		111.0870	111.0870	4.7300e-003	4.1300e-003	112.4372
Total	**0.0594**	**0.0488**	**0.4947**	**1.0900e-003**	**0.0258**	**8.4000e-004**	**0.0266**	**8.7600e-003**	**7.8000e-004**	**9.5400e-003**		**111.0870**	**111.0870**	**4.7300e-003**	**4.1300e-003**	**112.4372**

3.8 Demolition Phase II - 2022

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					0.1169	0.0000	0.1169	0.0177	0.0000	0.0177			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**0.1169**	**1.2427**	**1.3595**	**0.0177**	**1.1553**	**1.1730**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Demolition Phase II - 2022

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	7.0500e-003	0.3733	0.0532	1.0500e-003	0.0256	2.8200e-003	0.0284	6.9900e-003	2.6900e-003	9.6800e-003		114.0000	114.0000	3.2000e-003	0.0181	119.4609
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
Worker	0.0594	0.0488	0.4947	1.0900e-003	0.1232	8.4000e-004	0.1241	0.0327	7.8000e-004	0.0335		111.0870	111.0870	4.7300e-003	4.1300e-003	112.4372
Total	**0.0665**	**0.4221**	**0.5478**	**2.1400e-003**	**0.1488**	**3.6600e-003**	**0.1524**	**0.0397**	**3.4700e-003**	**0.0431**		**225.0871**	**225.0871**	**7.9300e-003**	**0.0222**	**231.8981**

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					0.0500	0.0000	0.0500	7.9600e-003	0.0000	7.9600e-003			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**0.0500**	**1.2427**	**1.2926**	**7.9600e-003**	**1.1553**	**1.1632**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Demolition Phase II - 2022

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	7.0500e-003	0.3733	0.0532	1.0500e-003	7.8400e-003	2.8200e-003	0.0107	2.6400e-003	2.6900e-003	5.3300e-003		114.0000	114.0000	3.2000e-003	0.0181	119.4609
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
Worker	0.0594	0.0488	0.4947	1.0900e-003	0.0258	8.4000e-004	0.0266	8.7600e-003	7.8000e-004	9.5400e-003		111.0870	111.0870	4.7300e-003	4.1300e-003	112.4372
Total	**0.0665**	**0.4221**	**0.5478**	**2.1400e-003**	**0.0336**	**3.6600e-003**	**0.0373**	**0.0114**	**3.4700e-003**	**0.0149**		**225.0871**	**225.0871**	**7.9300e-003**	**0.0222**	**231.8981**

3.8 Demolition Phase II - 2023

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					0.1169	0.0000	0.1169	0.0177	0.0000	0.0177			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280		3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**0.1169**	**0.9975**	**1.1144**	**0.0177**	**0.9280**	**0.9457**		**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Demolition Phase II - 2023

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	4.4400e-003	0.3249	0.0482	1.0100e-003	0.0256	2.1100e-003	0.0277	6.9900e-003	2.0200e-003	9.0100e-003		110.2680	110.2680	3.1200e-003	0.0175	115.5516
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
Worker	0.0555	0.0431	0.4547	1.0600e-003	0.1232	7.9000e-004	0.1240	0.0327	7.3000e-004	0.0334		108.4229	108.4229	4.2600e-003	3.8000e-003	109.6630
Total	**0.0599**	**0.3680**	**0.5029**	**2.0700e-003**	**0.1488**	**2.9000e-003**	**0.1517**	**0.0397**	**2.7500e-003**	**0.0424**		**218.6909**	**218.6909**	**7.3800e-003**	**0.0213**	**225.2146**

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					0.0500	0.0000	0.0500	7.9600e-003	0.0000	7.9600e-003			0.0000			0.0000
Off-Road	2.2691	21.4844	19.6434	0.0388		0.9975	0.9975		0.9280	0.9280	0.0000	3,746.9840	3,746.9840	1.0494		3,773.2183
Total	**2.2691**	**21.4844**	**19.6434**	**0.0388**	**0.0500**	**0.9975**	**1.0475**	**7.9600e-003**	**0.9280**	**0.9360**	**0.0000**	**3,746.9840**	**3,746.9840**	**1.0494**		**3,773.2183**

UCSC Kresge EIR Addendum - Santa Cruz County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Demolition Phase II - 2023

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	4.4400e-003	0.3249	0.0482	1.0100e-003	7.8400e-003	2.1100e-003	9.9500e-003	2.6400e-003	2.0200e-003	4.6600e-003		110.2680	110.2680	3.1200e-003	0.0175	115.5516
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
Worker	0.0555	0.0431	0.4547	1.0600e-003	0.0258	7.9000e-004	0.0266	8.7600e-003	7.3000e-004	9.5000e-003		108.4229	108.4229	4.2600e-003	3.8000e-003	109.6630
Total	**0.0599**	**0.3680**	**0.5029**	**2.0700e-003**	**0.0336**	**2.9000e-003**	**0.0365**	**0.0114**	**2.7500e-003**	**0.0142**		**218.6909**	**218.6909**	**7.3800e-003**	**0.0213**	**225.2146**

3.9 Site Preparation Phase II - 2023

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					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.6570**	**1.2660**	**20.9230**	**10.1025**	**1.1647**	**11.2672**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Site Preparation Phase II - 2023

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	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
Worker	0.0666	0.0518	0.5456	1.2700e-003	0.1479	9.5000e-004	0.1488	0.0392	8.8000e-004	0.0401		130.1075	130.1075	5.1200e-003	4.5600e-003	131.5956
Total	**0.0666**	**0.0518**	**0.5456**	**1.2700e-003**	**0.1479**	**9.5000e-004**	**0.1488**	**0.0392**	**8.8000e-004**	**0.0401**		**130.1075**	**130.1075**	**5.1200e-003**	**4.5600e-003**	**131.5956**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.4034	0.0000	8.4034	4.5461	0.0000	4.5461			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**8.4034**	**1.2660**	**9.6694**	**4.5461**	**1.1647**	**5.7108**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Site Preparation Phase II - 2023

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	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
Worker	0.0666	0.0518	0.5456	1.2700e-003	0.0309	9.5000e-004	0.0319	0.0105	8.8000e-004	0.0114		130.1075	130.1075	5.1200e-003	4.5600e-003	131.5956
Total	**0.0666**	**0.0518**	**0.5456**	**1.2700e-003**	**0.0309**	**9.5000e-004**	**0.0319**	**0.0105**	**8.8000e-004**	**0.0114**		**130.1075**	**130.1075**	**5.1200e-003**	**4.5600e-003**	**131.5956**

3.10 Grading Phase II - 2023

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					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129		2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**7.0826**	**0.7749**	**7.8575**	**3.4247**	**0.7129**	**4.1377**		**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

UCSC Kresge EIR Addendum - Santa Cruz County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.10 Grading Phase II - 2023

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	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
Worker	0.0555	0.0431	0.4547	1.0600e-003	0.1232	7.9000e-004	0.1240	0.0327	7.3000e-004	0.0334		108.4229	108.4229	4.2600e-003	3.8000e-003	109.6630
Total	**0.0555**	**0.0431**	**0.4547**	**1.0600e-003**	**0.1232**	**7.9000e-004**	**0.1240**	**0.0327**	**7.3000e-004**	**0.0334**		**108.4229**	**108.4229**	**4.2600e-003**	**3.8000e-003**	**109.6630**

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					3.0278	0.0000	3.0278	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129	0.0000	2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**3.0278**	**0.7749**	**3.8027**	**1.5411**	**0.7129**	**2.2541**	**0.0000**	**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.10 Grading Phase II - 2023

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	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
Worker	0.0555	0.0431	0.4547	1.0600e-003	0.0258	7.9000e-004	0.0266	8.7600e-003	7.3000e-004	9.5000e-003		108.4229	108.4229	4.2600e-003	3.8000e-003	109.6630
Total	**0.0555**	**0.0431**	**0.4547**	**1.0600e-003**	**0.0258**	**7.9000e-004**	**0.0266**	**8.7600e-003**	**7.3000e-004**	**9.5000e-003**		**108.4229**	**108.4229**	**4.2600e-003**	**3.8000e-003**	**109.6630**

3.11 Building Construction Phase II - 2023

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

UCSC Kresge EIR Addendum - Santa Cruz County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Building Construction Phase II - 2023

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	0.0000
Vendor	0.1602	7.1718	1.6208	0.0240	0.7423	0.0397	0.7820	0.2135	0.0380	0.2515		2,580.0921	2,580.0921	0.0485	0.3884	2,697.0418
Worker	2.7179	2.1135	22.2803	0.0519	6.0379	0.0390	6.0768	1.6015	0.0359	1.6375		5,312.7219	5,312.7219	0.2090	0.1864	5,373.4861
Total	**2.8781**	**9.2853**	**23.9010**	**0.0759**	**6.7801**	**0.0787**	**6.8588**	**1.8150**	**0.0739**	**1.8889**		**7,892.8139**	**7,892.8139**	**0.2575**	**0.5748**	**8,070.5279**

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	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Building Construction Phase II - 2023

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	0.0000
Vendor	0.1602	7.1718	1.6208	0.0240	0.2592	0.0397	0.2989	0.0949	0.0380	0.1329		2,580.0921	2,580.0921	0.0485	0.3884	2,697.0418
Worker	2.7179	2.1135	22.2803	0.0519	1.2627	0.0390	1.3016	0.4294	0.0359	0.4654		5,312.7219	5,312.7219	0.2090	0.1864	5,373.4861
Total	**2.8781**	**9.2853**	**23.9010**	**0.0759**	**1.5219**	**0.0787**	**1.6005**	**0.5243**	**0.0739**	**0.5983**		**7,892.8139**	**7,892.8139**	**0.2575**	**0.5748**	**8,070.5279**

3.11 Building Construction Phase II - 2024

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Building Construction Phase II - 2024

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	0.0000
Vendor	0.1521	6.9438	1.5748	0.0236	0.7423	0.0385	0.7808	0.2135	0.0368	0.2503		2,535.6038	2,535.6038	0.0481	0.3815	2,650.5009
Worker	2.5463	1.8781	20.6235	0.0503	6.0379	0.0368	6.0746	1.6015	0.0339	1.6354		5,189.7274	5,189.7274	0.1891	0.1723	5,245.7962
Total	**2.6985**	**8.8219**	**22.1983**	**0.0739**	**6.7802**	**0.0753**	**6.8554**	**1.8150**	**0.0707**	**1.8858**		**7,725.3311**	**7,725.3311**	**0.2372**	**0.5538**	**7,896.2971**

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	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Building Construction Phase II - 2024

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	0.0000
Vendor	0.1521	6.9438	1.5748	0.0236	0.2593	0.0385	0.2977	0.0949	0.0368	0.1318		2,535.6038	2,535.6038	0.0481	0.3815	2,650.5009
Worker	2.5463	1.8781	20.6235	0.0503	1.2627	0.0368	1.2995	0.4294	0.0339	0.4634		5,189.7274	5,189.7274	0.1891	0.1723	5,245.7962
Total	**2.6985**	**8.8219**	**22.1983**	**0.0739**	**1.5219**	**0.0753**	**1.5972**	**0.5244**	**0.0707**	**0.5951**		**7,725.3311**	**7,725.3311**	**0.2372**	**0.5538**	**7,896.2971**

3.11 Building Construction Phase II - 2025

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

UCSC Kresge EIR Addendum - Santa Cruz County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Building Construction Phase II - 2025

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	0.0000
Vendor	0.1447	6.7125	1.5375	0.0232	0.7424	0.0370	0.7794	0.2135	0.0354	0.2489		2,488.5517	2,488.5517	0.0478	0.3743	2,601.2718
Worker	2.3963	1.6806	19.1922	0.0487	6.0379	0.0349	6.0728	1.6015	0.0322	1.6337		5,073.7743	5,073.7743	0.1715	0.1601	5,125.7839
Total	**2.5410**	**8.3931**	**20.7297**	**0.0719**	**6.7802**	**0.0720**	**6.8522**	**1.8150**	**0.0676**	**1.8827**		**7,562.3260**	**7,562.3260**	**0.2193**	**0.5344**	**7,727.0556**

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	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

UCSC Kresge EIR Addendum - Santa Cruz County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Building Construction Phase II - 2025

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	0.0000
Vendor	0.1447	6.7125	1.5375	0.0232	0.2593	0.0370	0.2963	0.0950	0.0354	0.1304		2,488.5517	2,488.5517	0.0478	0.3743	2,601.2718
Worker	2.3963	1.6806	19.1922	0.0487	1.2627	0.0349	1.2976	0.4294	0.0322	0.4616		5,073.7743	5,073.7743	0.1715	0.1601	5,125.7839
Total	**2.5410**	**8.3931**	**20.7297**	**0.0719**	**1.5220**	**0.0720**	**1.5939**	**0.5244**	**0.0676**	**0.5920**		**7,562.3260**	**7,562.3260**	**0.2193**	**0.5344**	**7,727.0556**

3.12 Architectural Coating Phase II - 2023

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	1.3253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**1.5170**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.12 Architectural Coating Phase II - 2023

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	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
Worker	0.5436	0.4227	4.4561	0.0104	1.2076	7.7900e-003	1.2154	0.3203	7.1900e-003	0.3275		1,062.5444	1,062.5444	0.0418	0.0373	1,074.6972
Total	**0.5436**	**0.4227**	**4.4561**	**0.0104**	**1.2076**	**7.7900e-003**	**1.2154**	**0.3203**	**7.1900e-003**	**0.3275**		**1,062.5444**	**1,062.5444**	**0.0418**	**0.0373**	**1,074.6972**

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	1.3253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**1.5170**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.12 Architectural Coating Phase II - 2023

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	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
Worker	0.5436	0.4227	4.4561	0.0104	0.2525	7.7900e-003	0.2603	0.0859	7.1900e-003	0.0931		1,062.5444	1,062.5444	0.0418	0.0373	1,074.6972
Total	**0.5436**	**0.4227**	**4.4561**	**0.0104**	**0.2525**	**7.7900e-003**	**0.2603**	**0.0859**	**7.1900e-003**	**0.0931**		**1,062.5444**	**1,062.5444**	**0.0418**	**0.0373**	**1,074.6972**

3.12 Architectural Coating Phase II - 2024

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	1.3253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609		281.4481	281.4481	0.0159		281.8443
Total	**1.5061**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**		**281.4481**	**281.4481**	**0.0159**		**281.8443**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.12 Architectural Coating Phase II - 2024

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	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
Worker	0.5093	0.3756	4.1247	0.0101	1.2076	7.3600e-003	1.2149	0.3203	6.7800e-003	0.3271		1,037.9455	1,037.9455	0.0378	0.0345	1,049.1592
Total	**0.5093**	**0.3756**	**4.1247**	**0.0101**	**1.2076**	**7.3600e-003**	**1.2149**	**0.3203**	**6.7800e-003**	**0.3271**		**1,037.9455**	**1,037.9455**	**0.0378**	**0.0345**	**1,049.1592**

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	1.3253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1808	1.2188	1.8101	2.9700e-003		0.0609	0.0609		0.0609	0.0609	0.0000	281.4481	281.4481	0.0159		281.8443
Total	**1.5061**	**1.2188**	**1.8101**	**2.9700e-003**		**0.0609**	**0.0609**		**0.0609**	**0.0609**	**0.0000**	**281.4481**	**281.4481**	**0.0159**		**281.8443**

UCSC Kresge EIR Addendum - Santa Cruz County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.12 Architectural Coating Phase II - 2024

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	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
Worker	0.5093	0.3756	4.1247	0.0101	0.2525	7.3600e-003	0.2599	0.0859	6.7800e-003	0.0927		1,037.9455	1,037.9455	0.0378	0.0345	1,049.1592
Total	**0.5093**	**0.3756**	**4.1247**	**0.0101**	**0.2525**	**7.3600e-003**	**0.2599**	**0.0859**	**6.7800e-003**	**0.0927**		**1,037.9455**	**1,037.9455**	**0.0378**	**0.0345**	**1,049.1592**

3.12 Architectural Coating Phase II - 2025

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	1.3253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**1.4962**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

UCSC Kresge EIR Addendum - Santa Cruz County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.12 Architectural Coating Phase II - 2025

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	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
Worker	0.4793	0.3361	3.8384	9.7400e-003	1.2076	6.9900e-003	1.2146	0.3203	6.4400e-003	0.3268		1,014.7549	1,014.7549	0.0343	0.0320	1,025.1568
Total	**0.4793**	**0.3361**	**3.8384**	**9.7400e-003**	**1.2076**	**6.9900e-003**	**1.2146**	**0.3203**	**6.4400e-003**	**0.3268**		**1,014.7549**	**1,014.7549**	**0.0343**	**0.0320**	**1,025.1568**

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	1.3253					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**1.4962**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.12 Architectural Coating Phase II - 2025

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	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
Worker	0.4793	0.3361	3.8384	9.7400e-003	0.2525	6.9900e-003	0.2595	0.0859	6.4400e-003	0.0923		1,014.7549	1,014.7549	0.0343	0.0320	1,025.1568
Total	**0.4793**	**0.3361**	**3.8384**	**9.7400e-003**	**0.2525**	**6.9900e-003**	**0.2595**	**0.0859**	**6.4400e-003**	**0.0923**		**1,014.7549**	**1,014.7549**	**0.0343**	**0.0320**	**1,025.1568**

3.13 Paving Phase II - 2025

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	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.13 Paving Phase II - 2025

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	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
Worker	0.0489	0.0343	0.3917	9.9000e-004	0.1232	7.1000e-004	0.1239	0.0327	6.6000e-004	0.0333		103.5464	103.5464	3.5000e-003	3.2700e-003	104.6078
Total	**0.0489**	**0.0343**	**0.3917**	**9.9000e-004**	**0.1232**	**7.1000e-004**	**0.1239**	**0.0327**	**6.6000e-004**	**0.0333**		**103.5464**	**103.5464**	**3.5000e-003**	**3.2700e-003**	**104.6078**

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	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9152**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.13 Paving Phase II - 2025

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	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
Worker	0.0489	0.0343	0.3917	9.9000e-004	0.0258	7.1000e-004	0.0265	8.7600e-003	6.6000e-004	9.4200e-003		103.5464	103.5464	3.5000e-003	3.2700e-003	104.6078
Total	**0.0489**	**0.0343**	**0.3917**	**9.9000e-004**	**0.0258**	**7.1000e-004**	**0.0265**	**8.7600e-003**	**6.6000e-004**	**9.4200e-003**		**103.5464**	**103.5464**	**3.5000e-003**	**3.2700e-003**	**104.6078**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.0021	4.8368	38.7205	0.0624	6.7738	0.0570	6.8307	1.8051	0.0532	1.8583		6,517.7515	6,517.7515	0.5812	0.3395	6,633.4562
Unmitigated	4.0021	4.8368	38.7205	0.0624	6.7738	0.0570	6.8307	1.8051	0.0532	1.8583		6,517.7515	6,517.7515	0.5812	0.3395	6,633.4562

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,116.50	1,116.50	0.00	2,757,011	2,757,011
Library	0.00	0.00	0.00		
Total	1,116.50	1,116.50	0.00	2,757,011	2,757,011

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
Apartments Mid Rise	10.80	7.30	7.50	44.00	18.80	37.20	86	11	3
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.519141	0.056504	0.203851	0.131576	0.027298	0.006193	0.011024	0.003918	0.000708	0.000836	0.033532	0.001100	0.004319
Library	0.519141	0.056504	0.203851	0.131576	0.027298	0.006193	0.011024	0.003918	0.000708	0.000836	0.033532	0.001100	0.004319

5.0 Energy Detail

UCSC Kresge EIR Addendum - Santa Cruz County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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					
Apartments Mid Rise	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
Library	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					
Apartments Mid Rise	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
Library	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

UCSC Kresge EIR Addendum - Santa Cruz County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	5.6261	0.9637	83.6604	4.4200e-003		0.4642	0.4642		0.4642	0.4642	0.0000	150.7825	150.7825	0.1444	0.0000	154.3924
Unmitigated	5.6261	0.9637	83.6604	4.4200e-003		0.4642	0.4642		0.4642	0.4642	0.0000	150.7825	150.7825	0.1444	0.0000	154.3924

UCSC Kresge EIR Addendum - Santa Cruz County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.2273					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.8869					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.5119	0.9637	83.6604	4.4200e-003		0.4642	0.4642		0.4642	0.4642		150.7825	150.7825	0.1444		154.3924
Total	**5.6261**	**0.9637**	**83.6604**	**4.4200e-003**		**0.4642**	**0.4642**		**0.4642**	**0.4642**	**0.0000**	**150.7825**	**150.7825**	**0.1444**	**0.0000**	**154.3924**

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					
Architectural Coating	0.2273					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.8869					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.5119	0.9637	83.6604	4.4200e-003		0.4642	0.4642		0.4642	0.4642		150.7825	150.7825	0.1444		154.3924
Total	**5.6261**	**0.9637**	**83.6604**	**4.4200e-003**		**0.4642**	**0.4642**		**0.4642**	**0.4642**	**0.0000**	**150.7825**	**150.7825**	**0.1444**	**0.0000**	**154.3924**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B

Kresge College Trip Generation Analysis

FEHR PEERS

Memorandum

Date: March 25, 2022

To: George Dix, Rincon Consultants, Inc.

From: Mark Soendjojo, Dan Rubins, and Franziska Church, Fehr & Peers

Subject: University of California Santa Cruz (UCSC) Modified Kresge College – Trip Generation Analysis

SJ21-2138

The purpose of this memorandum is to present the results of the vehicle trip generation analysis conducted for the University of California Santa Cruz (UCSC) *Kresge College Renewal and Expansion Project* (*"Modified Project"*), which is 650 additional beds at the Kresge College campus.

Approach

The *2005 University of California Santa Cruz Long Range Development Plan (2005 LRDP) Final Environmental Impact Report (FEIR)* Transportation and Circulation section describes the existing transportation services and facilities on or near the project site, including the roadway system (including signalized intersections, unsignalized intersections, and freeway segments), bus and rail service, bicycle facilities, and pedestrian facilities. The EIR presents the results of the evaluation of the 2005 LRDP including a total number of trips for the UCSC campus. The *2019 Kresge College Renewal and Expansion Project Final Environmental Impact Report (FEIR)* added 200 beds to Kresge College Campus and determined consistency with the *2005 LRDP FEIR* by showing that the revised project is within the total number of trips studied in the *2005 LRDP FEIR*. This trip generation comparison was used to determine if the off-site transportation improvements required in the 2005 LRDP FEIR Mitigation Monitoring Report Program are still applicable. The same trip generation comparisons are done with the Modified Project description is documented in this project.

Specifically, the trip generation estimates for the Modified Project are added to the UCSC gateway counts from Spring 2017 (UCSC, June 1, 2017) and compared to the estimates in the *2005 University of California Santa Cruz Long Range Development Plan Final Environmental Impact Report (FEIR)*. The goal is to determine if the Modified Project trips plus the gateway counts would generate more traffic than estimated for the *2005 LRDP FEIR*, and therefore necessitate additional

transportation impact analyses to comply with the California Environmental Quality Act (CEQA). This memorandum only includes trip generation analysis and does not include any other transportation impact analysis.

Project Description

The proposed Project consists of selective demolition, renovation, and new construction of student housing at the Kresge College campus located at the western edge of UCSC campus. The Modified Project would add up to 450 beds to the approved 200 beds, for a total of up to 650 beds.

Other Campus Projects

Two other campus housing projects are planned in approximately the same timeframe as the Modified Project. Specifically, UCSC plans to add 22 net new beds to Crown College and 3,072 new beds as part of the Student Housing West (SHW) project and remove 1,096 existing beds on campus, for a net increase of 1,998 beds from other campus projects.

Gateway Trip Generation Scenarios

As stated above, the primary purpose of this trip generation analysis is to determine if the UCSC gateway trip generation with the Modified Project would exceed the gateway trip generation studied in the *2005 LRDP FEIR*. Gateway trip generation is at the campus main gateways. The primary influence on the gateway trip generation is the campus population and the number of beds on-campus. Thus, to understand the potential trip generation effect of the on-campus beds, this analysis is prepared for two baseline conditions: a) with an existing campus population of 17,870 students per the *2019 Kresge College Renewal and Expansion Project FEIR*, and b) cumulative student growth to 19,500 students per the *2005 LRDP FEIR*. Two of the previously analyzed scenarios from the *UCSC Kresge College – Trip Generation Analysis and Site Access Evaluation* memorandum (dated October 10, 2018) were included in this analysis for consistency and are summarized below:

- *Existing (2017) Conditions* – Spring 2017 Conditions with a campus population of 17,870 students, 3,418 faculty and staff, and 556 other daily population, and 9,269 student beds.
- *Year 2020 Conditions (as projected in the 2005 LRDP FEIR)* – Year 2020 campus population growth to 19,500 students, 4,499 faculty and staff, and 750 other daily campus population per the *2005 LRDP FEIR*.

The following plus project scenarios were included in the analysis which capture existing conditions as well as revised scenarios from the previously mentioned UCSC Kresge College memorandum:

- *Existing (2017) Conditions with Modified Kresge College* – Existing Conditions with up to 650 net-added beds at Kresge College (total of 9,919 student beds) and new academic space.
- *Cumulative (2023)* (horizon year between 2022 and 2023 when the Project is anticipated to be constructed) *Conditions with Modified Kresge College* – Campus population growth to 19,500 students, 3,994 faculty and staff, and 640 other daily population; and up to 650 net-added beds included in the Kresge College project (9,919 total beds) and new academic space.
- *Cumulative (2023) Conditions with Modified Kresge College and Student Housing West* – Campus population growth to 19,500 students, 3,994 faculty and staff, and 640 other daily population; and up to 650 net-added beds included in the Kresge College project and 1,998 net-added beds included in the Student Housing West and Crown College projects (11,917 total beds).

Based on the understanding that the campus population and number of beds influence the UCSC gateway trip generation, **Table 1** summarizes the campus wide number of on-campus student housing beds, student enrollment, and faculty/staff estimates for the five scenarios outlined above. As summarized in **Table 1**, the cumulative enrollment projection of 19,500 students is unchanged from the projection in the *2005 LRDP FEIR*. However, the cumulative faculty and staff projections for this analysis are lower than the projections in the *2005 LRDP FEIR*. Projections for the other daily population (non-UC campus employees, construction workers, and visitors) are also lower. The other daily populations are lower as the *2005 LRDP FEIR* assumed a higher number of people.

Table 1: On-Campus Student Housing and Population Summary

Scenario	Student Housing Beds	Campus Population			
		Students[1]	Faculty and Staff	Other Daily Population[2]	Campus Total
Existing (2017) Conditions	9,269	17,870	3,418	556	21,844
Existing (2017) Conditions with Modified Kresge College	9,919	17,870	3,418	556	21,844
Year 2020 Conditions (as projected in the *2005 LRDP FEIR*)	9,190	19,500	4,499	750	24,749
Cumulative (2023) Conditions with Modified Kresge College	9,919	19,500	3,994	640	24,134
Cumulative (2023) Conditions with Modified Kresge College and Student Housing West[3]	11,917	19,500	3,994	640	24,134

Notes:

1. The on-campus student population increases from Existing Conditions to Cumulative (2023) Conditions. Refer to Table 8 of the attached UCSC Trip Generation workflow.
2. Other daily population includes non-UC employees working on campus, construction workers, and visitors.
3. Cumulative (2023) Conditions with Modified Kresge College and Student Housing West includes the addition of the 3,072 beds in the SHW project, up to 650 net new beds in Kresge College, 22 net new beds in Crown College, and the removal of 1,096 existing beds on campus.

Source: UCSC and Fehr & Peers, 2022.

Analysis Methods

The existing gateway trip generation estimates for the campus were developed in the previous *2019 Kresge College Renewal and Expansion Project FEIR*, supported by the *UCSC Kresge College – Trip Generation Analysis and Site Access Evaluation* memorandum (dated October 10, 2018) and were used for the analysis. Specifically, the *2019 Kresge College Renewal and Expansion Project FEIR* used Spring 2017 traffic counts at the campus's gateways to establish existing gateway trip generation estimates for the campus. These counts were used to develop campus vehicle trip rates for students and other campus users. The on-campus and off-campus student vehicle trip rates were developed using the academic calendar UCSC Spring 2016 Travel Survey collected by UCSC Transportation & Parking Services (TAPS).

Adding on-campus housing while maintaining the enrollment level will reduce the amount of off-campus traffic generated by the campus, as fewer students would need to commute to the campus and travel through the gateways. With more housing on campus and less people working on campus, the campus would generate fewer off-campus trips. A summary of the gateway trip generation analysis process is provided in **Attachment A**.

UCSC Gateway Trip Generation Estimate

The gateway vehicle trip generation estimates for Existing Conditions (Spring 2017) from the campus gateway counts and for Cumulative Conditions (Year 2020) from the *2005 LRDP FEIR* are presented in **Table 2**.

The up to added 650 on-campus beds at Kresge College would reduce the campus-wide vehicle gateway trip generation. Specifically, compared to the existing gateway counts, the daily vehicle gateway trip generation under Existing Conditions with Modified Kresge College would be 202 trips lower. The morning and evening peak hour vehicle gateway trip generation estimates would be 14 and 19 trips lower than Existing Conditions, respectively.

Under the Cumulative (2023) Conditions with Modified Kresge College Conditions, the daily vehicle gateway trip generation would be 6,666 trips lower than the gateway trip generation evaluated in the *2005 LRDP FEIR*. The morning and evening peak hour vehicle gateway trip generation estimates would be 324 and 346 trips lower, respectively. Including the additional residential units in the SHW project under the Cumulative (2023) Conditions would further reduce

the number of gateway trips. The resulting daily gateway trip generation estimates would be 7,288 trips lower than the gateway trip generation in the *2005 LRDP FEIR*. The morning and evening peak hour gateway trip generation estimates would be 367 and 407 trips lower, respectively.

Table 2: UCSC Campus Vehicle Gateway Trip Generation Estimates

Scenario	Daily	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
Existing Conditions Gateway Counts							
Existing (2017) [A]	22,764	1,404	1,059	345	2,022	781	1,241
2005 LRDP FEIR Trip Estimates							
Year 2020 Conditions[1] [B]	32,044	1,885	1,470	415	2,593	1,037	1,556
Kresge College Project Trip Estimates							
Existing Conditions with Modified Kresge College [C]	22,562	1,390	1,049	341	2,003	774	1,229
Cumulative (2023) Conditions with Modified Kresge College [D]	25,378	1,561	1,178	383	2,247	869	1,378
Cumulative (2023) Conditions with Modified Kresge College and SHW [E]	24,756	1,518	1,146	372	2,186	846	1,340
Kresge College Project Changes							
Change from Existing Conditions							
Vehicle Trip Change [C-A]	-202	-14	-10	-4	-19	-7	-12
Percent Change [(C-A)/A]	-0.9%	-1.0%	-0.9%	-1.2%	-0.9%	-0.9%	-1.0%
Difference from 2005 LRDP FEIR with Modified Kresge College Only							
Vehicle Trip Change [D-B]	-6,666	-324	-292	-32	-346	-168	-178
Percent Change [(D-B)/B]	-21%	-17%	-20%	-8%	-13%	-16%	-11%
Difference from 2005 LRDP FEIR with Modified Kresge College and Student Housing West							
Vehicle Trip Change [E-B]	-7,288	-367	-324	-43	-407	-191	-216
Percent Change [(E-B)/B]	-23%	-19%	-22%	-10%	-16%	-18%	-14%

Notes:

1. Total daily vehicle gateway trip generation and the peak hour gateway trip generation estimates per the *2005 LRDP FEIR* (Table 2-7).

Source: UCSC and Fehr & Peers, 2022.

Conclusions

The gateway trip generation estimates for the three project scenarios are less than the gateway trip generation estimates used in the *2005 LRDP FEIR*. The lower gateway trip generation is the result of a greater portion of students living on-campus than analyzed in the *2005 LRDP FEIR*. Thus, with the campus traffic generation estimates within the levels of the projected and analyzed gateway trip generation in the *2005 LRDP FEIR*, no additional project specific off-campus analysis is needed.

Attachments

Attachment A – University of California at Santa Cruz (UCSC) Campus Trip Generation Work Flow: Modified Kresge College Project

University of California at Santa Cruz (UCSC) Campus Trip Generation Work Flow: Modified Kresge College Project

Step 1

Step 1: Estimate Daily Vehicle Trip Rates from Campus Gateway Counts

- Data: Average daily traffic counts at campus main gateways and quarterly enrollment (source: Spring 2017 Traffic Counts: UC Santa Cruz, June 1, 2017).
- Estimate daily student vehicle trip rates:
  1. Student vehicle trips = Gateway ADT counts (see Table 2) – non-student vehicle trips (see Table 3)
  2. Student daily vehicle trip generation rates = student daily vehicle trips / enrollment (FTE)
- Key assumptions:
  1. Daily vehicle trip rates for faculty and staff are from the UCSC Spring 2016 Travel Survey.

Step 2

Step 2: Estimate Morning & Evening Peak Hour Student Trip Rates

- Data: Spring 2017 gateway peak hour counts in 15-min intervals; headcounts for students, employees and visitors
- Estimate AM and PM peak hour vehicle trip rates for students living on-campus and off-campus:
  1. Vehicle trip generation for students = peak hour student vehicle trips / Spring 2017 enrollment
  2. On-campus vs. off-campus rates = UCSC average student vehicle trip gen rates & on-/off-campus trip gen ratios developed based on the UCSC Spring 2016 Travel Survey.
- Key assumptions:
  - Peak hour vehicle trip generation for UC employees and non-UC employees (i.e., visitors and construction workers) are estimated based on headcount and the trip generation rates in the UCSC LRDP FEIR.

Step 3

Step 3: Modified Kresge College Project Description

- Project Description: UCSC Modified Kresge College Project Description (January 2022)
- Headcounts for 2017 conditions and employment projections for Cumulative Conditions: UCSC Historic Summary Sheet (June 1, 2017); Student Housing West Draft Environmental Impact Report (2018)

Step 4

Step 4: UCSC Campus Trip Generation Summary

- Summarize enrollment, employment, on-campus and off-campus student beds and vehicle trip generation estimates for various scenarios, including:
  1. Existing Conditions (2017)
  2. Existing Conditions with Modified Kresge College
  3. Year 2020 Conditions (2005 LRDP)
  4. Cumulative Conditions (2023) with Modified Kresge College
  5. Cumulative Conditions (2023) with Modified Kresge College and Student Housing West

Step 5

Step 5: Conclusions

- Under Existing Conditions with Modified Kresge College, the net added 450 student beds on Kresge College would slightly reduce the overall campus trip generation under daily, AM peak hour and PM peak hour conditions
- Under Cumulative Conditions with Modified Kresge College and Cumulative Conditions with Modified Kresge College and Student Housing West, the daily, AM peak hour and PM peak hour trip generation would be lower than the approved trip generation in the 2005 LRDP FEIR.

Step 1. Estimate Daily Vehicle Trip Rates from Campus Gateway Counts

Table 1A. UCSC Weekday Gateway ADT and Vehicle Trip Rates for Students

Year	Quarter	ADT (Main + West Entrances)	UC Employees [1]	Non-UC Employees[2]	Estimated Non-Student Daily Vehicle Trips[3]	Estimated Student Daily Vehicle Trips	Quarterly Enrollment	Student Daily Veh Trips/Student
2003	Oct-03	24,966	3,736	450	6,724	18,242	14,631	1.25
2004	Apr-04	24,716	3,736	450	6,724	17,992	13,556	1.33
2004	Oct-04	NA	3,736	450	6,724	NA	14,649	NA
2005	Apr-05	24,768	3,712	458	6,695	18,073	13,802	1.31
2005	Oct-05	25,009	3,712	458	6,695	18,314	14,695	1.25
2006	Apr-06	25,013	3,687	466	6,666	18,347	13,708	1.34
2006	Oct-06	21,851	3,687	466	6,666	15,185	15,046	1.01
2007	Apr-07	22,864	3,663	474	6,637	16,227	14,089	1.15
2007	Oct-07	22,795	3,663	474	6,637	16,158	15,463	1.04
2008	Apr-08	21,012	3,638	483	6,608	14,404	14,431	1.00
2008	Oct-08	19,759	3,638	483	6,608	13,151	16,284	0.81
2009	Apr-09	22,725	3,614	491	6,579	16,146	15,290	1.06
2009	Nov-09	22,128	3,614	491	6,579	15,549	16,415	0.95
2010	May-10	22,146	3,589	499	6,551	15,595	15,550	1.00
2010	Oct-10	21,420	3,589	499	6,551	14,869	16,828	0.88
2011	May-11	21,075	3,565	507	6,522	14,553	15,549	0.94
2011	Nov-11	20,601	3,565	507	6,522	14,079	17,071	0.82
2012	May-12	19,801	3,540	515	6,493	13,308	15,789	0.84
2012	Nov-12	19,006	3,540	515	6,493	12,513	17,050	0.73
2013	May-13	19,412	3,516	523	6,464	12,948	15,886	0.82
2013	Nov-13	19,463	3,516	523	6,464	12,999	16,863	0.77
2014	May-14	19,782	3,491	532	6,435	13,347	15,750	0.85
2014	Nov-14	20,248	3,491	532	6,435	13,813	17,516	0.79
2015	May-15	21,262	3,467	540	6,406	14,856	16,522	0.90
2015	Nov-15	20,923	3,442	548	6,377	14,546	17,505	0.83
2016	May-16	21,813	3,418	556	6,348	15,465	16,581	0.93
2016	Nov-16	22,887	3,418	556	6,348	16,539	18,465	0.90
2017	Apr-17	22,764	3,418	556	6,348	16,416	17,870	0.92
Jul-05	**Apr-17**	**22,764**	**3,418**	**556**	**6,348**	**16,416**	**17,870**	**0.92**

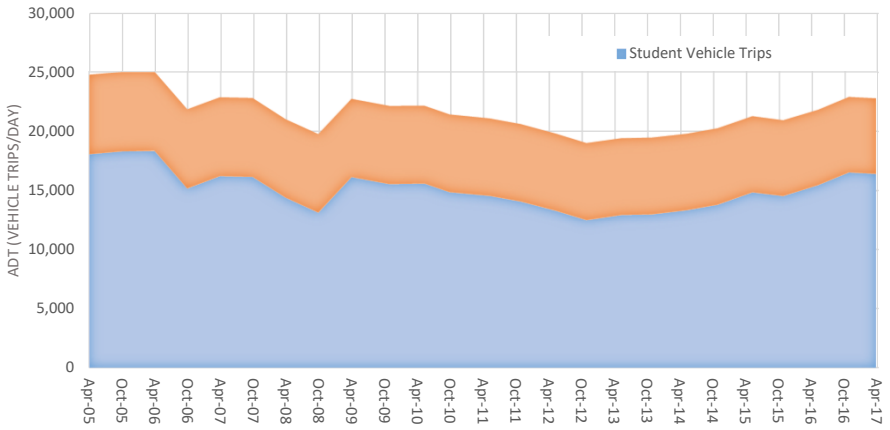


FIGURE 1. UCSC GATEWAY TRAFFIC VOLUME (2005 - 2017)

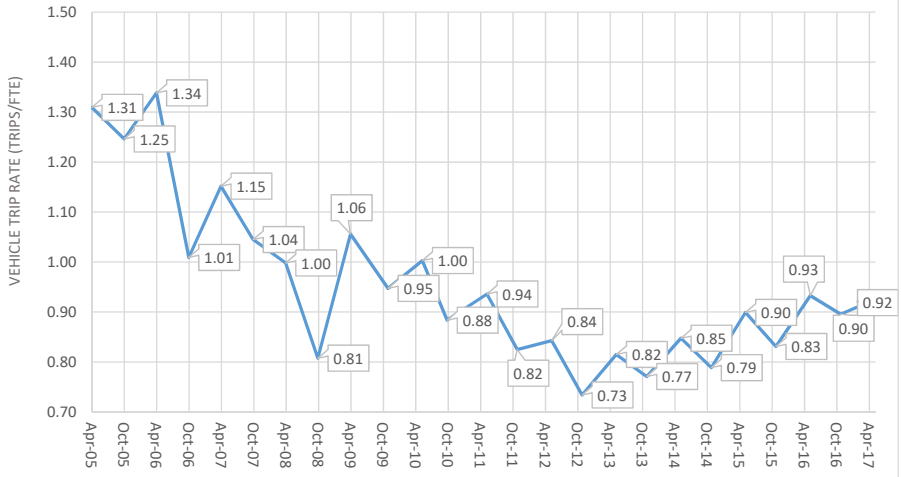


FIGURE 2. STUDENT DAILY VEHICLE TRIP RATE (2005-2017)

Notes:

1. UC employees include UC faculty and staff.

2. Non-UC employees include all other employees on campus, construction workers and visitors.

3. Non-student trips include all vehicle trips generated by UC employees and non-UC employees. Non-student trips were estimated based on the headcounts and the trip generation rates included in the 2005 LRDP EIR.

4. Green highlights the actual employee headcounts for school years of 2003-2004 and 2016-2017, which were provided in the project description. A linear interpolation was used to estimate the headcounts for the intermmediate years.

Table 1B. UCSC Weekday Gateway AM Peak Hour and Vehicle Trip Rates for Students

Year	Quarter[5]	AM (Main + West Entrances)	UC Employees [1]	Non-UC Employees[2]	Estimated Non-Student AM Vehicle Trips[3]	Estimated Student AM Vehicle Trips	Quarterly Enrollment	Student AM Veh Trips/Student
2007	Fall '07	1,378	3,663	474	331	1,047	15,463	0.068
2008	Spring '08	1,246	3,638	483	330	916	14,431	0.063
2009	Spring '09	1,423	3,614	491	328	1,095	15,290	0.072
2009	Fall '09	1,288	3,614	491	328	960	16,415	0.058
2010	Fall '10	1,359	3,589	499	327	1,032	16,828	0.061
2011	Spring '11	1,291	3,565	507	326	965	15,549	0.062
2011	Fall '11	1,354	3,565	507	326	1,028	17,071	0.060
2012	Spring '12	1,237	3,540	515	325	912	15,789	0.058
2012	Fall '12	1,300	3,540	515	325	975	17,050	0.057
2013	Spring '13	1,195	3,516	523	323	872	15,886	0.055
2013	Fall '13	1,336	3,516	523	323	1,013	16,863	0.060
2014	Spring '14	1,171	3,491	532	322	849	15,750	0.054
2014	Fall '14	1,055	3,491	532	322	733	17,516	0.042
2015	Spring '15	1,331	3,467	540	321	1,010	16,522	0.061
2015	Fall '15	1,182	3,442	548	319	863	17,505	0.049
2016	Spring '16	1,344	3,418	556	318	1,026	16,581	0.062
2016	Fall '16	1,406	3,418	556	318	1,088	18,465	0.059
2017	Spring '17	1,404	3,418	556	318	1,086	17,870	0.061
2017	Fall '17	1,422	3,418	556	318	1,104	19,135	0.058
2018	Spring '18	1,311	3,418	556	318	993	19,135	0.052

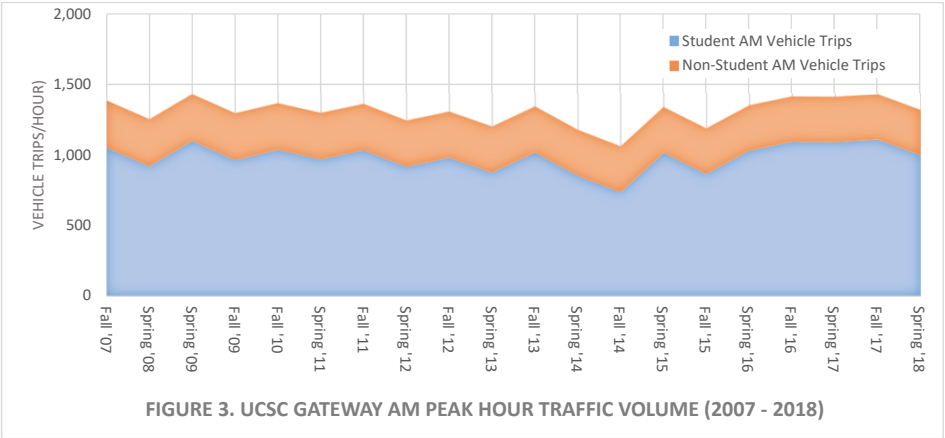


FIGURE 3. UCSC GATEWAY AM PEAK HOUR TRAFFIC VOLUME (2007 - 2018)

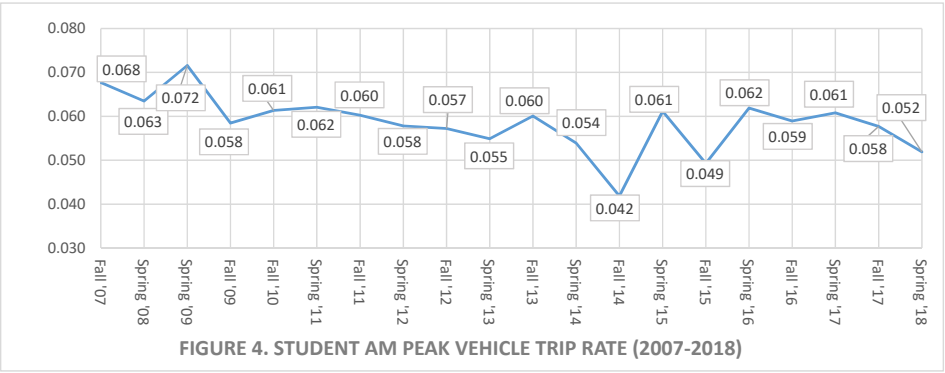


FIGURE 4. STUDENT AM PEAK VEHICLE TRIP RATE (2007-2018)

Notes:

1. UC employees include UC faculty and staff.

2. Non-UC employees include all other employees on campus, construction workers and visitors.

3. Non-student trips include all vehicle trips generated by UC employees and non-UC employees. Non-student trips were estimated based on the headcounts and the trip generation rates included in the 2005 LRDP EIR.

4. Green highlights the actual employee headcounts for school years of 2003-2004 and 2016-2017, which were provided in the project description. A linear interpolation was used to estimate the headcounts for the intermmediate years.

5. Peak hour volumes and trip rates for Fall '08 and Spring '10 were not presented due to incomplete historical count data.

Table 1C. UCSC Weekday Gateway PM Peak Hour and Vehicle Trip Rates for Students

Year	Quarter[5]	PM (Main + West Entrances)	UC Employees [1]	Non-UC Employees[2]	Estimated Non-Student PM Vehicle Trips[3]	Estimated Student PM Vehicle Trips	Quarterly Enrollment	Student PM Veh Trips/Student
2007	Fall '07	2,016	3,663	474	455	1,561	15,463	0.101
2008	Spring '08	1,757	3,638	483	453	1,304	14,431	0.090
2009	Spring '09	1,961	3,614	491	452	1,509	15,290	0.099
2009	Fall '09	1,567	3,614	491	452	1,115	16,415	0.068
2010	Fall '10	1,811	3,589	499	450	1,361	16,828	0.081
2011	Spring '11	1,717	3,565	507	448	1,269	15,549	0.082
2011	Fall '11	1,827	3,565	507	448	1,379	17,071	0.081
2012	Spring '12	1,686	3,540	515	446	1,240	15,789	0.079
2012	Fall '12	1,724	3,540	515	446	1,278	17,050	0.075
2013	Spring '13	1,688	3,516	523	444	1,244	15,886	0.078
2013	Fall '13	1,737	3,516	523	444	1,293	16,863	0.077
2014	Spring '14	1,774	3,491	532	443	1,331	15,750	0.085
2014	Fall '14	1,586	3,491	532	443	1,143	17,516	0.065
2015	Spring '15	1,819	3,467	540	441	1,378	16,522	0.083
2015	Fall '15	1,799	3,442	548	439	1,360	17,505	0.078
2016	Spring '16	1,781	3,418	556	437	1,344	16,581	0.081
2016	Fall '16	2,166	3,418	556	437	1,729	18,465	0.094
2017	Spring '17	2,026	3,418	556	437	1,589	17,870	0.089
2017	Fall '17	2,171	3,418	556	437	1,734	19,135	0.091
2018	Spring '18	1,847	3,418	556	437	1,410	19,135	0.074

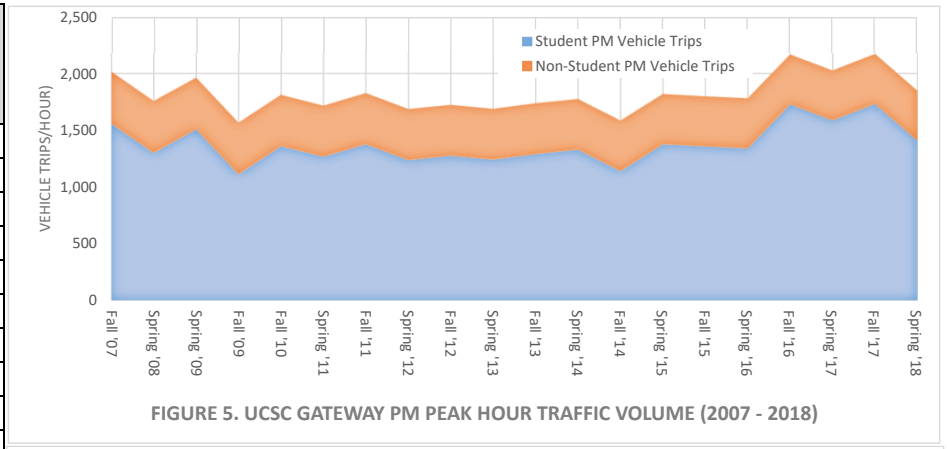


FIGURE 5. UCSC GATEWAY PM PEAK HOUR TRAFFIC VOLUME (2007 - 2018)

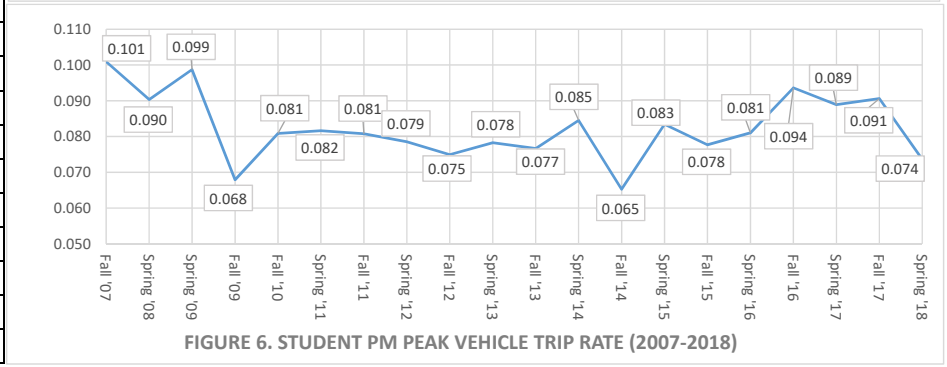


FIGURE 6. STUDENT PM PEAK VEHICLE TRIP RATE (2007-2018)

Notes:

1. UC employees include UC faculty and staff.

2. Non-UC employees include all other employees on campus, construction workers and visitors.

3. Non-student trips include all vehicle trips generated by UC employees and non-UC employees. Non-student trips were estimated based on the headcounts and the trip generation rates included in the 2005 LRDP EIR.

4. Green highlights the actual employee headcounts for school years of 2003-2004 and 2016-2017, which were provided in the project description. A linear interpolation was used to estimate the headcounts for the intermmediate years.

5. Peak hour volumes and trip rates for Fall '08 and Spring '10 were not presented due to incomplete historical count data.

Step 2. Estimate Morning & Evening Peak Hour Student Trip Rates from April 2017 Gateway Counts

Table 2. Spring 2017 UCSC Gateway Counts							
Traffic Volumes	ADT	AM Total	AM In	AM Out	PM Total	PM In	PM Out
Weekday Average (A)	22,764	1,404	1,059	345	2,023	781	1,241

Table 3. Spring 2017 Non-Student Vehicle Trips							
Traffic Volumes	ADT	AM Total	AM In	AM Out	PM Total	PM In	PM Out
UC Employees	5,592	274	213	60	376	150	226
Non-UC Employees	756	44	36	9	62	24	38
Total Non-Student Vehicle Trips(B)	6,348	318	249	69	438	174	264

Note: Non-student trips were estimated based on the Spring 2017 headcounts provided in the Historic Summary Sheet (June 1, 2017) and trip rates derived from UCSC Spring 2016 campus travel survey data.

Table 4. Spring 2017 Student Vehicle Trips							
Traffic Volumes	ADT	AM Total	AM In	AM Out	PM Total	PM In	PM Out
Weekday Average (C = A - B)	16,416	1,086	810	276	1,585	607	977

Table 5. Student Vehicle Trip Rates (Daily, AM & PM)							
Spring 2017 Enrollment					***17,870***		
Sping 2017 Trip Rates (student vehicle trips/FTE)							
	ADT	AM Total	AM In	AM Out	PM Total	PM In	PM Out
Weekday Average	0.92	0.061	0.045	0.015	0.089	0.034	0.055

Trip Rates for Students Living On-campus and Off-campus

The on-campus/off-campus trip ratio was derived from the Spring 2016 UCSC Travel Survey

Table 6. UCSC Spring 2016 Travel Survey Results

	Daily Vehicle Trip Generation Rate per Student
On-Campus Students	0.657
Off-Campus Students	0.923
On-campus / Off-campus	71.2%

Table 7a. UCSC Spring 2017 Student Vehicle Trip Generation Rates: Morning and Evening Peak Hours

(vehicle trips/FTE)	AM Total	AM In	AM Out	PM Total	PM In	PM Out
On-Campus Students	0.051	0.038	0.013	0.074	0.028	0.046
Off-Campus Students	0.071	0.053	0.018	0.104	0.040	0.064
On-campus / Off-campus	71.2%			71.2%		

For the peak hour on- vs. off-campus student vehicle trip rate, this analysis uses the same ratio as the daily conditions.

Table 7b. UCSC Spring 2017 Student Vehicle Trip Generation Rates: Weekday, Morning and Evening Peak Hours

(vehicle trips/FTE)	ADT	AM Total	AM In	AM Out	PM Total	PM In	PM Out
On-Campus Students	0.77	0.051	0.038	0.013	0.074	0.028	0.046
Off-Campus Students	1.08	0.071	0.053	0.018	0.104	0.040	0.064
On-campus / Off-campus	71.2%	71.2%			71.2%		

Step 3: UCSC Student Housing and Population Summary

Table 8. UCSC Housing & Population Summary

	Student Enrollment & Housing			Faculty and Other Daily Population				Total Campus Population
	Enrollment (FTE)	On-Campus Beds	Off-Campus Beds	Faculty and Staff	Non-UC Employees	Construction Workers	Visitors	
2005 LRDP EIR								
2005 Conditions	14,052	5,842	8,210	3,736	150	100	200	18,238
Year 2020 Conditions (2005 LRDP)	19,500	9,190	10,310	4,499	250	200	300	24,749
Year 2020 Conditions (2008 Settlement Agreement)	19,500	10,125	9,375	5,074	250	200	250	25,274
Modified Kresge College Project and Student Housing West Project								
Existing Conditions (2017)	17,870	9,269	8,601	3,418	166	150	240	21,844
Net Change with Modified Kresge College	-	650	-	10	-	-	-	21,854
Existing Conditions with Modified Kresge College	17,870	9,919	7,951	3,428	166	150	240	21,854
Cumulative Conditions with Modified Kresge College	19,500	9,919	9,581	3,994	190	200	250	24,134
Cumulative Conditions with Modified Kresge College and Student Housing West[1]	19,500	11,917	7,583	3,994	190	200	250	24,134

Note:

1. The Student Housing West Project includes 3,072 new beds as part of the SHW Project and 22 new beds in Crown College, plus the removal of 1,096 existing beds.

Step 4: UCSC Campus Vehicle Trip Generation Summary *(see detailed trip generation tables in Appendix)*

Table 9. UCSC Campus Trip Generation

Scenarios	Student Enrollment & Housing			Faculty and Other Daily Population		Campus Gateway Traffic (vehicle trips)		
	Enrollment (FTE)	On-Campus Beds	Off-Campus Beds	Faculty and Staff	Other Daily Population	Weekday	Morning Peak Hour Total	Evening Peak Hour Total
1. Existing Conditions (2017)	17,870	9,269	8,601	3,418	556	22,764	1,404	2,022
2. Existing Conditions with Modified Kresge College Project	17,870	9,919	7,951	3,418	556	22,562	1,390	2,003
3. Year 2020 Conditions (2005 LRDP)	19,500	9,190	10,310	4,499	750	32,044	1,886	2,595
4. Cumulative with Modified Kresge College	19,500	9,919	9,581	3,994	640	25,378	1,561	2,247
5. Cumulative with SHW and Modified Kresge College	19,500	11,917	7,583	3,994	640	24,756	1,518	2,186

Note: This table does not exclude the trips to/from the 2300 Delaware Campus.

Step 5: Conclusions

1. Under Existing Conditions with Modified Kresge College, the net added 650 student beds on Kresge College would slightly reduce the overall campus trip generation under daily, AM peak hour and PM peak hour conditions.
2. Under Cumulative Conditions with Modified Kresge College and Cumulative Conditions with Kresge College and Student Housing West, the daily, AM peak hour and PM peak hour trip generation would be lower than the approved trip generation in the 2005 LRDP FEIR.

Appendix: UCSC Campus Vehicle Trip Generation at External Gateways: Modified Kresge College Scenarios

Table 10. Existing Conditions (2017) 2017 UCSC trip rates for students, employees and visitors, and 2017 population (54% of students living on campus)

Scenario 1	Housing Type	Unit	Enrollment / Persons	% of Total Students	Vehicle Trip Rates							Vehicle Trips						
					Daily	AM Total	AM In	AM Out	PM Total	PM In	PM Out	Daily	AM Total	AM In	AM Out	PM Total	PM In	PM Out
Existing Conditions (2017)	On-campus	FTE	9,269	52%	0.769	0.051	0.038	0.013	0.074	0.028	0.046	7,126	472	352	120	687	263	424
	Off-campus	FTE	8,601	48%	1.080	0.071	0.053	0.018	0.104	0.040	0.064	9,290	614	458	156	897	344	553
	Total Students	*FTE*	*17,870*	*100%*	*0.919*	*0.061*	*0.045*	*0.015*	*0.089*	*0.034*	*0.055*	*16,416*	*1,086*	*810*	*276*	*1,584*	*607*	*977*
	UC employees	Persons	3,418	-	1.64	0.08	0.06	0.02	0.11	0.04	0.07	5,592	274	214	60	376	150	226
	All Other	Persons	556	-	1.36	0.08	0.06	0.02	0.11	0.04	0.07	756	44	35	9	62	24	38
	Total Trip Gen	*Persons*	*21,844*	-	-	-	-	-	-	-	-	***22,764***	***1,404***	***1,059***	***345***	***2,022***	***781***	***1,241***

Table 11. Existing with Modified Kresge College Project 2017 UCSC trip rates for students, employees and visitors, 2017 student enrollment plus the Modified Kresge College project.

Scenario 2	Housing Type	Unit	Enrollment / Persons	% of Total Students	Vehicle Trip Rates							Vehicle Trips						
					Daily	AM Total	AM In	AM Out	PM Total	PM In	PM Out	Daily	AM Total	AM In	AM Out	PM Total	PM In	PM Out
Year 2020 with Modified Kresge College Project	On-campus	FTE	9,919	56%	0.769	0.051	0.038	0.013	0.074	0.028	0.046	7,626	504	376	128	736	282	454
	Off-campus	FTE	7,951	44%	1.080	0.071	0.053	0.018	0.104	0.040	0.064	8,588	568	424	144	829	318	511
	Total Students	*FTE*	*17,870*	*100%*	*0.919*	*0.061*	*0.045*	*0.015*	*0.089*	*0.034*	*0.055*	*16,214*	*1,072*	*800*	*272*	*1,565*	*600*	*965*
	UC employees	Persons	3,418	-	1.64	0.08	0.06	0.02	0.11	0.04	0.07	5,592	273	213	60	376	150	226
	All Other	Persons	556	-	1.36	0.08	0.06	0.02	0.11	0.04	0.07	756	45	36	9	62	24	38
	Total Trip Gen	*Persons*	*21,844*	-								***22,562***	***1,390***	***1,049***	***341***	***2,003***	***774***	***1,229***

Table 12. Year 2020 Conditions (2005 LRDP) LRDP EIR trip rates and population projections (47% of students living on campus)

Scenario 3	Housing Type	Unit	Enrollment / Persons	% of Total Students	Vehicle Trip Rates							Vehicle Trips						
					Daily	AM Total	AM In	AM Out	PM Total	PM In	PM Out	Daily	AM Total	AM In	AM Out	PM Total	PM In	PM Out
Year 2020 Conditions (2005 LRDP)	On-campus	FTE	9,190	47%	1.28	0.08	0.06	0.02	0.10	0.04	0.06	11,749	690	538	152	950	380	570
	Off-campus	FTE	10,310	53%	1.28	0.08	0.06	0.02	0.10	0.04	0.06	13,180	775	604	171	1,065	426	639
	Total Students	*FTE*	*19,500*	*100%*	*1.28*	*0.08*	*0.06*	*0.02*	*0.10*	*0.04*	*0.06*	*24,929*	*1,465*	*1,142*	*323*	*2,015*	*806*	*1,209*
	UC employees	Persons	4,499	-	1.36	0.08	0.06	0.02	0.11	0.04	0.07	6,119	360	280	80	494	198	296
	All Other	Persons	750	-	1.36	0.08	0.06	0.02	0.11	0.04	0.07	996	60	48	12	84	33	51
	Total Trip Gen	*Persons*	*24,749*	-	-	-	-	-	-	-	-	***32,044***	***1,885***	***1,470***	***415***	***2,593***	***1,037***	***1,556***

Table 13. Cumulative with Modified Kresge College Project 2017 UCSC trip rates for students, employees and visitors, updated 2020 population projections plus the Modified Kresge College project.

Scenario 6	Housing Type	Unit	Enrollment / Persons	% of Total Students	Vehicle Trip Rates							Vehicle Trips						
					Daily	AM Total	AM In	AM Out	PM Total	PM In	PM Out	Daily	AM Total	AM In	AM Out	PM Total	PM In	PM Out
Year 2020 with Modified Kresge College Project	On-campus	FTE	9,919	51%	0.769	0.051	0.038	0.013	0.074	0.028	0.046	7,626	506	377	129	736	282	454
	Off-campus	FTE	9,581	49%	1.080	0.071	0.053	0.018	0.104	0.040	0.064	10,348	685	511	174	999	383	616
	Total Students	*FTE*	*19,500*	*100%*	*0.919*	*0.061*	*0.045*	*0.015*	*0.089*	*0.034*	*0.055*	*17,974*	*1,191*	*888*	*303*	*1,735*	*665*	*1,070*
	UC employees	Persons	3,994	-	1.64	0.08	0.06	0.02	0.11	0.04	0.07	6,534	319	249	70	440	176	264
	All Other	Persons	640	-	1.36	0.08	0.06	0.02	0.11	0.04	0.07	870	51	41	10	72	28	44
	Total Trip Gen	*Persons*	*24,134*	-								***25,378***	***1,561***	***1,178***	***383***	***2,247***	***869***	***1,378***

Table 14. Cumulative with Student Housing West and Modified Kresge College 2017 UCSC trip rates for students, employees and visitors, updated 2020 population projections plus the proposed SHW and Modified Kresge College projects.

Scenario 7	Housing Type	Unit	Enrollment / Persons	% of Total Students	Vehicle Trip Rates							Vehicle Trips						
					Daily	AM Total	AM In	AM Out	PM Total	PM In	PM Out	Daily	AM Total	AM In	AM Out	PM Total	PM In	PM Out
Cumulative with Student Housing West and Modified Kresge College	On-campus	FTE	11,917	61%	0.769	0.051	0.038	0.013	0.074	0.028	0.046	9,162	606	452	154	884	339	545
	Off-campus	FTE	7,583	39%	1.080	0.071	0.053	0.018	0.104	0.040	0.064	8,190	542	404	138	790	303	487
	Total Students	*FTE*	*19,500*	*100%*	*0.919*	*0.061*	*0.045*	*0.015*	*0.089*	*0.034*	*0.055*	*17,352*	*1,148*	*856*	*292*	*1,674*	*642*	*1,032*
	UC employees	Persons	3,994	-	1.64	0.08	0.06	0.02	0.11	0.04	0.07	6,534	319	249	70	440	176	264
	All Other	Persons	640	-	1.36	0.08	0.06	0.02	0.11	0.04	0.07	870	51	41	10	72	28	44
	Total Trip Gen	*Persons*	*24,134*	-								***24,756***	***1,518***	***1,146***	***372***	***2,186***	***846***	***1,340***

Appendix C

Historic Resources Technical Analysis Memorandum

To: Erika Carpenter, Senior Environmental Planner, UCSC

From: Bridget Maley, Principal, architecture + history, llc

Date: October 19, 2002

Re: Kresge Renewal Modified Project – Revised Impact Analysis for Historic Resources

Introduction

At your request, I have reviewed the proposed changes to the UC Santa Cruz, Kresge Renewal Project (Modified Project). I understand you are issuing an Addendum to the Final EIR, which was certified by the UC Regents in March 2019.

Methodology

I met with the project design team, TEF Design, yourself, and Jolie Kerns via Zoom for a presentation of the proposed project changes and a discussion of the project Design Guidelines to be provided to the design build team. I subsequently reviewed the project description and the Design Guidelines (July 2022) in detail. I also reviewed the presentation to the UC Santa Cruz, Design Advisory Board from March 9, 2022.

The following table summarizes the changes from the Original Project to the Modified Project.

EXISTING BUILDINGS		
Existing Building	**Original Project**	**Modified Project**
Building A1	Partially renovated for residential space.	Fully renovated for residential space.
Building R1	Fully renovated for residential space.	Reconstructed with an additional floor for residential space.
Building R2	Fully renovated for residential space.	Reconstructed with an additional floor for residential space.
Building R3	Demolished	No Change
Building R4	Fully renovated for residential space.	Reconstructed with an additional floor for residential space.
Building R5	Demolished	No Change
Building R6	Fully renovated for residential space.	Reconstructed with an additional floor for residential space.
Building R7	Demolished	No Change
Building R8	Demolished	Reconstructed with an additional floor for residential space.
Building R9	Fully renovated for student support.	Reconstructed for residential space. Square footage for student support use is no longer necessary as centrally located space has become available for use by the identified services.

Existing Building	Original Project	Modified Project
Building R10	Fully renovated for student support.	Reconstructed with an additional floor for residential space. Square footage for student support use is no longer necessary as centrally located space has become available for use by the identified services.
Building R11	Demolished	No Change
Building R12	Partially renovated for residential space.	No Change
Building R13	Partially renovated and converted to student co-op space.	No Change
Annex A	Demolished	No Change
Annex B	Converted from graduate academic use to a maintenance workshop.	Demolished
A2	Fully Renovated for student support.	No Change
G2	Fully Renovated for student support.	No Change
G1 (Town Hall)	Demolished	No Change
The Triplets	Demolished	No Change
Mini Gym (Recreation Room)	Demolished	No Change

NEW CONSTRUCTION		
--	--	New six story residential infill building (Kresge L) for continuing students that would be constructed in the south end of the project site and would cluster with existing infill housing, Kresge Buildings J and K, which were built in 2004.[4]
--	New Construction of Residential Cluster (RNEW)	No Change
--	New Construction of Town Hall	No Change
--	New Construction of Academic Building (ACAD)	No Change

Notes:
1. Reconstructed buildings = Entirely rebuilt including a new foundation within the existing building footprint.
2. Fully renovated buildings = Fully renovated buildings retain the foundations and primary wood structure where in good condition; interior layouts, MEP systems, and exterior envelope would be replaced.
3. Partially renovated buildings = The foundations, primary structure and exterior envelope remain as is, and only minor interior improvements would be made.
4. The Kresge L building would be located within the boundary of the original project site but is physically separate from the Kresge College complex designed by Charles Moore and his firm Moore, Lyndon, Turnbull, Whitacre (MLTW), and is not adjacent to the Kresge College Historic District's individual buildings.

In addition to the changes identified in the table above, due to project staging of construction materials and access of construction vehicles, it is possible that the Modified Project would affect the "Waterfall Steps," a contributing landscape element within the identified UC Santa Cruz Kresge College Historic District (District).

Design Guidelines

Design Guidelines prepared for the project (See Attachment) would provide a visual tool to guide the project related to building renovation and reconstruction to ensure that the buildings retain the design intent of the original Kresge complex. The renovated buildings would retain many historic materials and features and would be upgraded where necessary. The Guidelines illustrate how upgrades to the facades and façade finishes, fenestration, color and interior layout and finishes would be accomplished under the Modified Project.

Regarding reconstruction of buildings, the intent of the Design Guidelines is to give an overview of how to maintain the overall character of the District, and key character-defining features of the buildings, while reconstructing a number of the buildings. This would be reflected in the footprint, materials, architectural details, and vocabulary of the buildings, but would allow for an additional floor, accessible entry via elevators, and reconfiguration of interior spaces to accommodate current student housing needs and code requirements.

The Design Guidelines also address keeping key circulation and site elements intact, including site circulation, landscaping, and gathering areas also defined as character-defining features of the District.

Revised Impact Analysis

The Modified Project would result in both a slight increase as well as some reduced impacts to the individual buildings and character-defining features within the District. For instance, given the current condition of many District buildings and the desire for additional housing, buildings R1, R2, R4, R6, R8, R9 and R10 would not be renovated as proposed under the Original Project, but reconstructed with a new foundation and an additional story that would increase the overall height of the roofline by five feet on the back elevation facing the forest, which could result in a slight increase in impacts. However, the front façades of these buildings, which face the pedestrian street, would

remain the same height as the other contributing buildings that would not be altered by the Modified Project.

Building R8, which was proposed for demolition under the Original Project, would be reconstructed as part of the Modified Project. Reconstruction of this important historic district contributor would be an improvement and reduce impacts because the overall feeling of this area of the District would not be as altered as compared to the Original Project. Reconstructing building R8 also reduces the number of buildings being demolished, from nine in the Original Project to eight in the Modified Project.

With the Modified Project, the need for internal circulation through the project for construction access may affect the "Waterfall steps," creating a slightly increased impact if they are to be reconstructed rather than maintained as is.

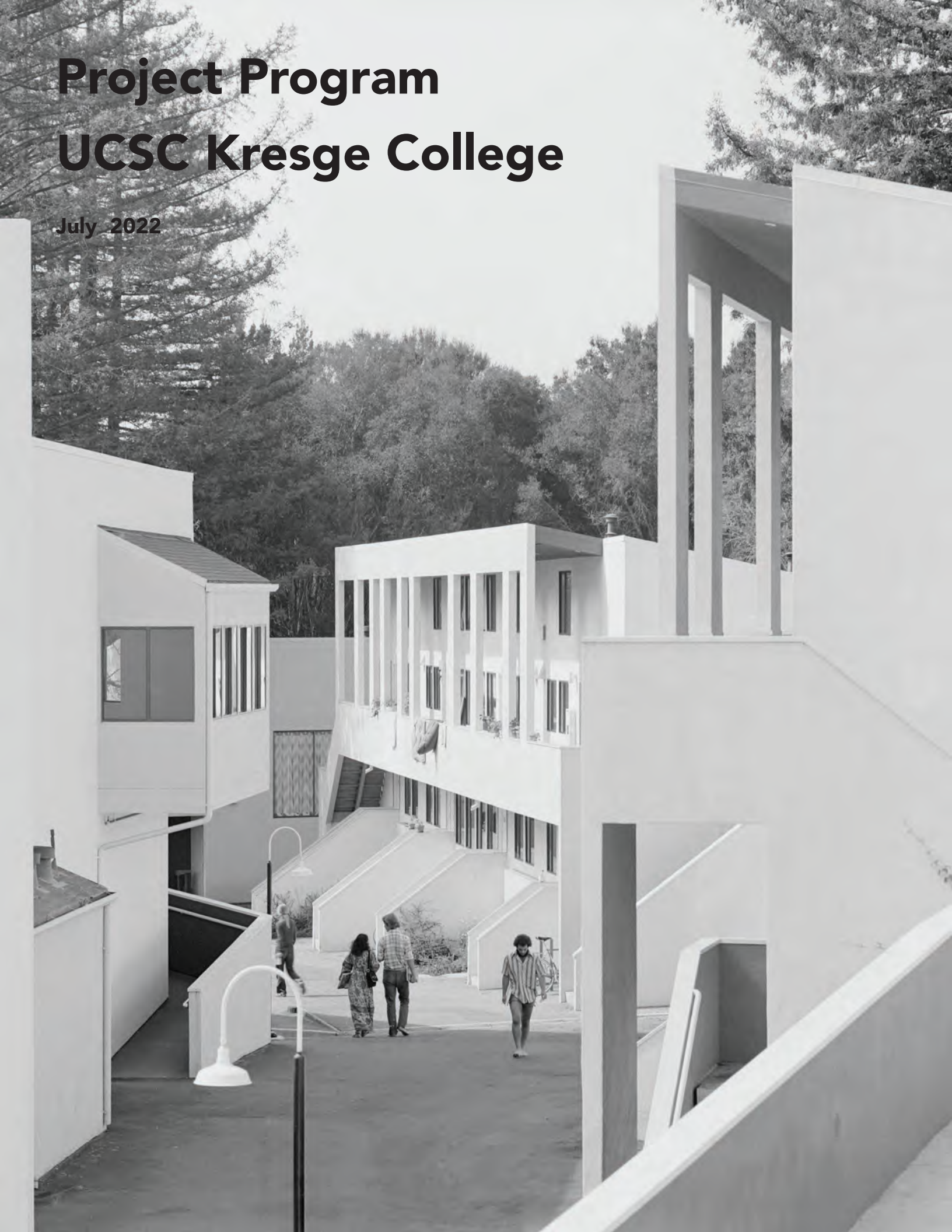
The Design Guidelines would delineate actions that would provide a visual tool to guide the project related to renovation and reconstruction of buildings as well as to keep the key circulation and site elements intact in order to retain the design intent of the original Kresge complex. The certified Final EIR for the Original Project called out several project design components that would remain relevant in the Modified Project. These design components include: selective demolition; the retention and restoration of key legacy features such as the Piazzetta; locating a portion of the new construction at the historic district edge to minimize disturbance to and avoid significance changes to the existing buildings; and a continuation of the architectural character of Kresge College through the use of salvaged and compatible materials, and common design features.

While the Modified Project would continue to result in significant unavoidable impacts to the Kresge College Historic District, an identified historical resource under CEQA, these important design components in both the Original Project and the Modified Project would serve as positive actions. As described above, the Modified Project would also follow the detailed set of Design Guidelines. While many buildings would be reconstructed rather than renovated, it is the design intent that many of those buildings would be virtually identical to their original configuration, especially their primary "street-facing" façades.

Attachment – Design Guidelines, July 2022 developed by TEF Design.

Project Program
UCSC Kresge College

July 2022



Design Guidelines

KRESGE COLLEGE

Vol. 3

UNIVERSITY OF CALIFORNIA
SANTA CRUZ

STUDIO/
GANG
/ARCHITECTS

tef DESIGN

0.0 TABLE OF CONTENTS

1.0 CONTEXT

1.1 INTRODUCTION

Designed by Moore, Lyndon, Turnbull & Whitaker (MLTW) and completed in 1972, Kresge College at the University of California Santa Cruz is an important example of collegiate Postmodern architecture and planning. Inspired by Italian hill towns, the college's site is organized around pedestrian streets, piazzettas, "trivial" monuments, and the natural landscape of Santa Cruz. Kresge's buildings are "distinguished by abstract architectural forms," simple materials, and bold colors and supergraphics.[1]

Given Kresge's unique architectural language, these Design Guidelines were created to outline the essential design characteristics of the College. They are intended to help protect the Postmodern character of Kresge while allowing for necessary changes and upgrades. The goal of this document is to help the university, design teams, and contractors understand the unique features of the Kresge and guide the renovation of existing Postmodern buildings and the design of applicable new construction.

Section 1.0 includes important reference documents and a glossary of terms and abbreviations used throughout this document. Section 2.0 provides Guidelines for Renovation and is intended for use with mixed-use building A1 and Student Support Buildings A2, G2, R12, and R13 (Fig. 1.1-1). Section 3.0 offers Guidelines for New Construction for use with mixed use building Kresge L and Residential Buildings R1, R2, R4, R6, R8, R9, and R10 (Fig.1.1-1). Section 4.0 includes appendices with original plans and elevations for all buildings discussed in these guidelines.

1.2 REFERENCE DOCUMENTS

The following documents were essential to the creation of these Guidelines and can be reviewed by new construction and renovation teams in need of supplementary information:

- *Kresge College Architectural Drawings*, MTLW / Moore Turnbull, 1971
- *University of California, Santa Cruz - Kresge College Historic Resource Evaluation (HRE)*, completed by Architecture + History, LLC with Knapp Architects and Watson Heritage Consulting, 2018
- *Body, Memory, and Architecture*, Kent C. Bloomer, Charles W. Moore, Robert J. Yudell, Yale University Press, 1977
- "How to Make a Place," MLTW / Turnbull and Charles W. Moore, *Progressive Architecture*, May 1974

1 University of California, Santa Cruz - Kresge College HRE, p.56

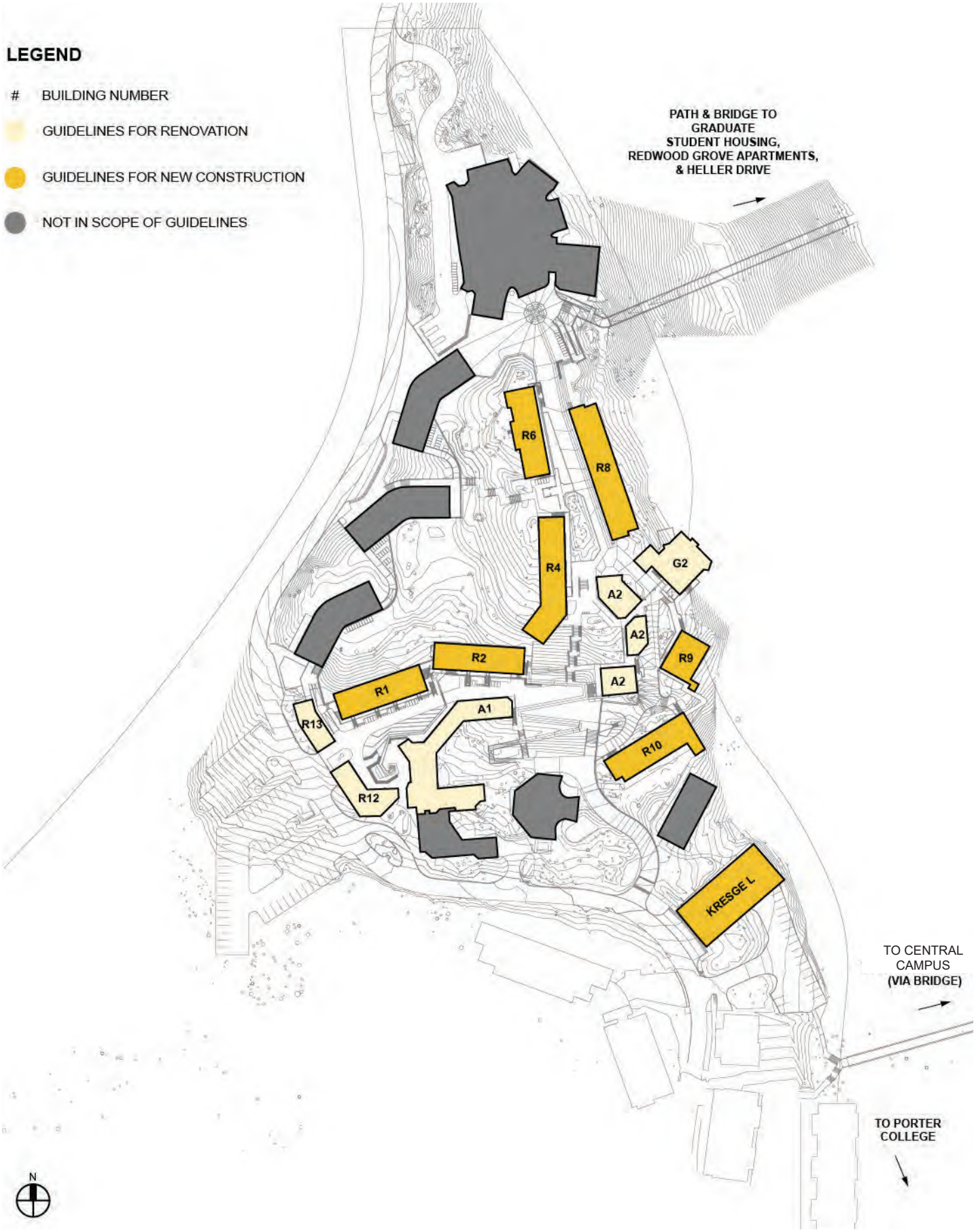


Fig 1.1-1 Kresge Site Plan

1.0 CONTEXT

1.3 TERMS & ABBREVIATIONS

ADD-ON ELEMENTS: a common architectural motif found in the architecture of Kresge College in which circulation elements are differentiated from the main building mass through form and/or color

CHARACTER-DEFINING FEATURE: a prominent or distinctive aspect, quality, or characteristic of a property that contributes significantly to its physical character. Structures, objects, vegetation, spatial relationships, views, furnishings, decorative details, and materials are examples of such features.

MLTW: Moore, Lyndon, Turnbull & Whitaker was an architecture firm established in Berkeley, California in 1962. The firm rose to prominence with the design of the Sea Ranch Condominium complex in 1964.

PIAZZETTA: small public plazas designed within the Kresge College site.

POSTMODERN ARCHITECTURE: a movement that emerged in the 1960s as a reaction to the perceived shortcoming of modern architecture through designs that emphasized variety, humor, ornament, and references to local/vernacular styles.

SUPERGRAPHICS: large-scale graphic design elements, often colorful and/or geometric, used as architectural accents on facades and/or interior spaces. (Fig. 1.1-2)

UCSC: University of California Santa Cruz

Fig 1.1-2 Supergraphics at A1 (Kresge College, Morely Baer Photographs - UCSC Archives)

2.0 RENOVATION

2.1 SCOPE & PRINCIPLES

There are five existing buildings that are intended for renovation (Fig. 2.1-1):

- A1
- A2
- G2
- R12
- R13

The Guidelines for Renovation are applicable to these buildings and are intended to ensure that work at these sites remains compatible with the overall Postmodern character of Kresge College. In support of this goal, the following design principles shall be applied to each renovation:

1. Maintain the original design of the existing building to the extent possible
2. Enhance and support character-defining features through renovation
3. Incorporate changes in ways that are compatible with the original building's design

The following sections will cover more detailed renovation guidelines for Buildings A1, A2, G2, R12, and R13. Existing photographs of each building provide for design, color, and material reference.

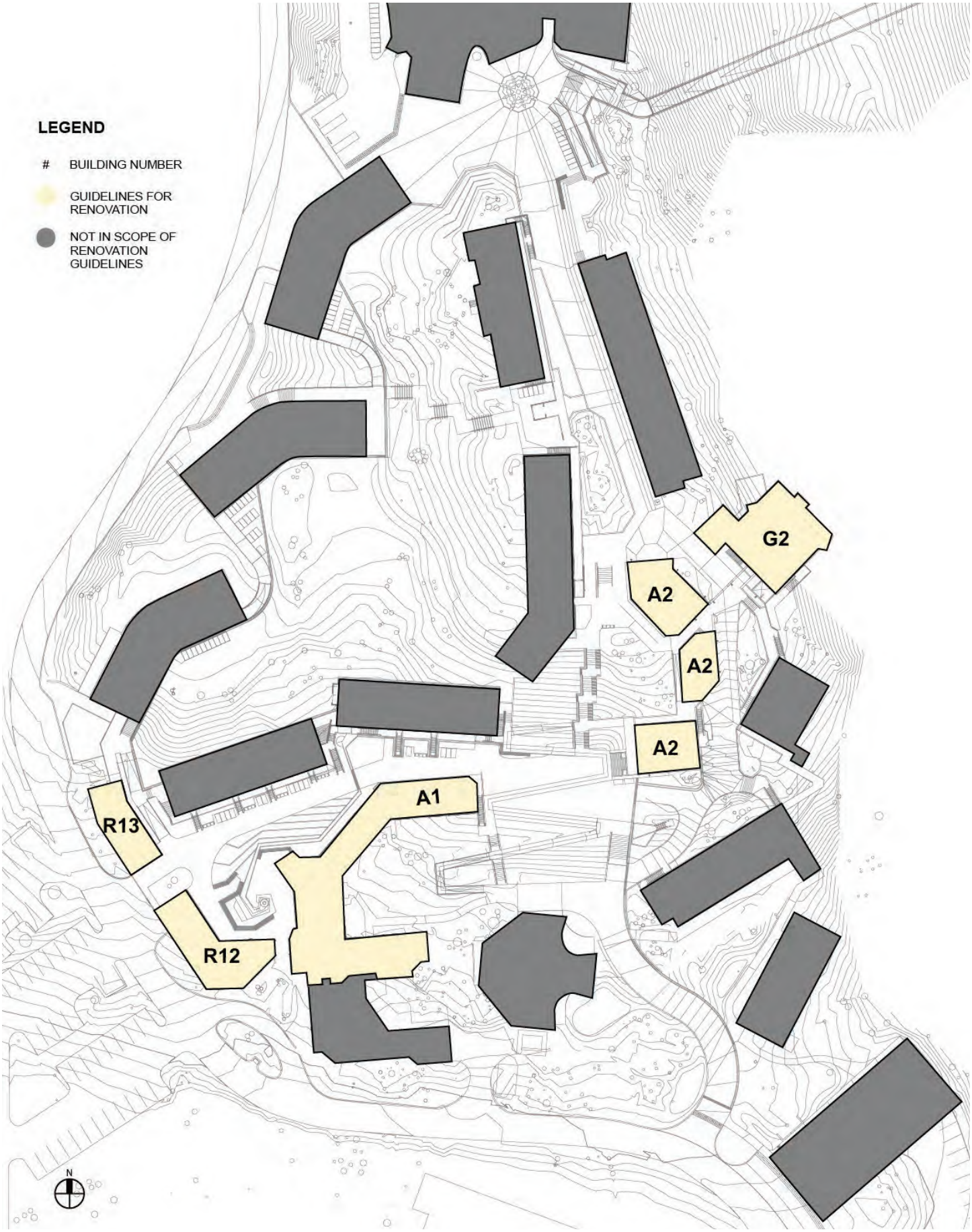


Fig 2.1-1 Site Plan of Renovation Projects

2.2 RENOVATION GUIDELINES

2.2.1 BUILDING A1

1. Footprint & Facade
- The overall building footprint and facade design shall remain as originally designed with the exception of locations where additional structure and insulation are required
- Where doors are replaced, new doors shall match existing doors in design, glazing extents, and paint color
- New sidelites frames shall match the adjacent door frame
- See Fenestration below for guidelines on replacement windows
- Louvers, downspouts, and other building support systems shall be painted to match the facade color
- Facade supergraphics shall be applied at locations of historic graphics and match in scale, color, and original design (see Appendix 4.1)
- See Facade Finish & Color for additional guidelines on color at building facades

2. Fenestration
- New windows shall be simple, low-profile punched openings (not multi-lite)
- Frames shall be aluminum or other thin-profile
- New windows shall be flush with the exterior facade (any recess required shall be implemented at the building interior)
- Existing fenestration patterns/ alignments shall be maintained to the extent possible
- New window locations proposed shall be compatible with the existing facade design in scale and pattern
- Large angled landscape-facing windows at the Student Lounge shall match existing
- New skylights shall match existing in size, design, and glazing opacity

3. Facade Finish
- Building facade shall be smooth finish stucco
- Stucco panel sizes shall be maximized and number of panel joints minimized
- Panel reveals shall run parallel or perpendicular to openings at 90° angles
- Reveals shall also be provided at each floor level, parallel to floor plate
- Reveals between stucco panels shall be concave and chamfered

4. Color (see Appendix 4.1 for exterior colors)
- Facade color shall match existing (i.e. lighter at street-facing facades and darker at landscape-facing facades)
- Doors shall be the same color as the facade, except where existing doors are painted with accent colors
- Areas of accent color (at overhangs, circulation, doors, recessed facades, etc) shall match existing color(s) in hue, saturation, and extents
- See Footprint & Facade for guidelines on Supergraphics

5. Interiors
- Student Lounge sloped gypsum ceiling shall match existing design
- Interior Walls are recommended to be kept in the existing locations at Levels 2 & 3 to minimize the impacts of changes to fenestration patterns at the facade

Fig. 2.2-1
Street-facing facade with supergraphics

Fig. 2.2-2
Panel joint locations with recessed facade and accent colors

Fig. 2.2-3
Angled windows at Student Lounge

Fig. 2.2-4 Color at windows at landscape-facing facade. Note: Doors should be painted to match facade color

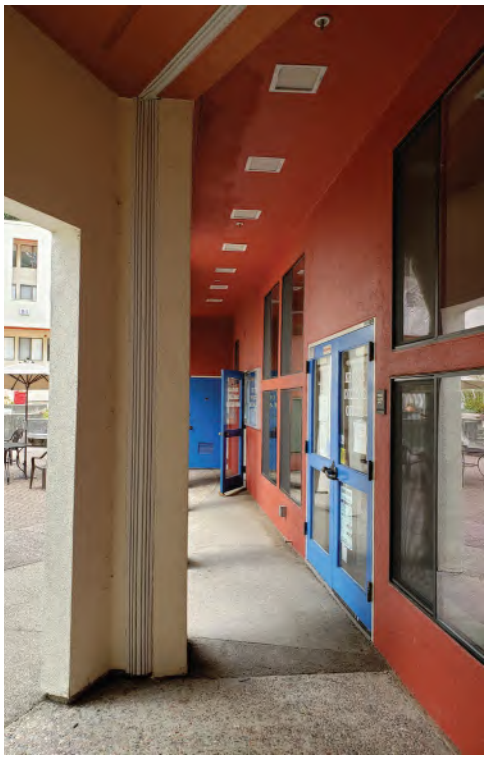


Fig. 2.2-5
Accent color at facade walls and doors

Fig. 2.2-6
Accent color at underside of ramp

2.2 RENOVATION GUIDELINES

2.2.2 BUILDING A2

1. Footprint & Facade
- The overall building footprint and facade design shall remain as originally designed with the exception of locations where additional structure, new elevator, and insulation are required
- Where doors are replaced, new doors shall match existing doors in design, glazing extents, and paint color
- New sidelites frames shall match the adjacent door frame
- See Fenestration below for guidelines on replacement windows
- Louvers, downspouts, and other building support systems shall be painted to match the facade color
- Facade supergraphics shall be applied at locations of historic graphics and match in scale, color, and original design (see Appendix 4.1)
- See Facade Finish & Color for additional guidelines on color at building facades

2. Fenestration
- Where multi-lite windows exist, new windows shall match existing design in pattern, opening size, proportion and profile detail.
- All other windows shall be simple, low-profile punched openings
- Frames shall be aluminum or other thin-profile
- New windows shall be flush with the exterior facade (any recess required shall be implemented at the building interior)
- Existing fenestration patterns/ alignments shall be maintained to the extent possible
- New window locations proposed shall be compatible with the existing facade design in scale and pattern

3. Facade Finish
- See Building A1 (2.2.1) for requirements

4. Color (see Appendix 4.1 for exterior colors)
- Facade color shall match existing (i.e. lighter at street-facing facades and darker at landscape-facing facades)
- Doors shall be the same color as the facade, except where existing doors are painted with accent colors
- Areas of accent color shall match existing color(s) in hue, saturation, and extents
- See Footprint & Facade for guidelines on Supergraphics

5. Interiors
- Diagonal glu-lam beam at A2-A and trusses at A2-C and shall be remain exposed
- Painted beams throughout shall match remain exposed and match in color

6. Water Management
- Runnels and other elements of the site water management system located at the building shall match existing

Fig. 2.2-7
Street-facing facade with accent colors

Fig. 2.2-8
Existing supergraphic at south facade

Fig. 2.2-9
Landscape-facing facade with multi-lite windows

Fig. 2.2-10
Accent color applications at facades

Fig. 2.2-11
Exposed painted structure at interior

Fig. 2.2-12
Existing water management systems

2.2 RENOVATION GUIDELINES

2.2.3 BUILDING G2

1. Footprint & Facade
- The overall building footprint and facade design shall remain as originally designed with the exception of locations where additional structure, new elevator, and insulation are required
    - Note: new elevator overrun is intended to be concealed by a lift of the roof matching the existing roof slope at the southwest corner of the building
- Where doors are replaced, new doors shall match existing doors in design, glazing extents, and paint color
- New sidelites frames shall match the adjacent door frame
- See Fenestration below for guidelines on replacement windows
- Louvers, downspouts, and other building support systems shall be painted to match the facade color
- Facade supergraphics shall be applied at locations of historic graphics and match in scale, color, and original design (see Appendix 4.1 for Exterior Color & Supergraphics)

2. Fenestration
- Where multi-lite windows exist, new windows shall match existing design
- All other windows shall be simple, low-profile punched openings
- Frames shall be aluminum or other thin-profile
- New windows shall be flush with the exterior facade (any recess required shall be implemented at the building interior)
- Existing fenestration patterns/ alignments shall be maintained to the extent possible
- New window locations proposed shall be compatible with the existing facade design in scale and pattern
- New skylights shall match existing skylights in size, design, and glazing opacity

3. Facade Finish
- See Building A1 (2.2.1) for requirements

4. Color (see Appendix 4.1 for exterior colors)
- Facade color shall match existing (i.e. lighter at street-facing facades and darker at landscape-facing facades)
- Doors shall be the same color as the facade, except where existing doors are painted with accent colors
- Areas of accent color shall match existing color(s) in hue, saturation, and extents
- See Footprint & Facade for guidelines on Supergraphics

5. Interiors
- Painted beams throughout shall match remain expressed and match in color
- New accent fixtures (wall sconces and pendants) shall match the original design intent
- Existing double height spaces shall remain double-height
- Existing interior wall openings at stairs to match existing in scale/proportion

6. Water Management
- Runnels and other elements of the site water management system located at the building shall match existing

Fig. 2.2-13
Street-facing facade with accent colors

Fig. 2.2-14
Accent colors and multi-lite window

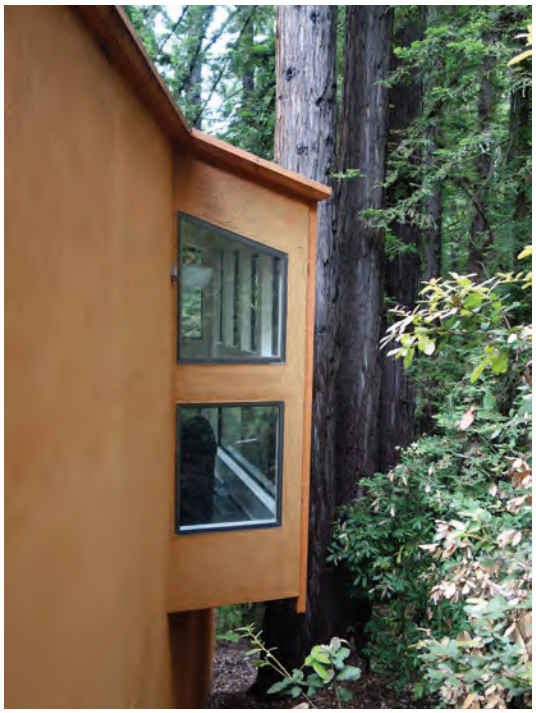


Fig. 2.2-15
Landscape-facing facade with angled windows and projected volume

Fig. 2.2-16
Landscape-facing facade and windows

Fig. 2.2-17
Interior expressed beams and accent lighting (Kresge College, Morely Baer Photographs - UCSC Archives)

Fig. 2.2-18
Interior wall openings and accent lighting (Kresge College, Morely Baer Photographs - UCSC Archives)

2.2 RENOVATION GUIDELINES

2.2.4 BUILDING R12

1. Footprint & Facade
- The overall building footprint and facade design shall remain as originally designed with the exception of:
  - locations where additional structure and insulation are required
  - new openings for accessible entry vestibules off the piazzetta (adjacent to existing exterior stairs)
- Where doors are replaced, new doors shall match existing doors in design, glazing extents, and paint color
- See Fenestration below for guidelines on replacement windows and glazing
- Louvers, gutters, downspouts, and other building support systems shall be painted to match the facade color
- Facade supergraphics shall be applied at locations of historic graphics and match in scale, color, and original design (see Appendix 4.1)
- See Facade Finish & Color for additional guidelines on color at building facades

2. Fenestration
- Windows shall be simple, low-profile punched openings
- Frames shall be aluminum or other thin-profile
- New windows shall be flush with the exterior facade (any recess required shall be implemented at the building interior)
- Existing fenestration patterns/ alignments shall be maintained to the extent possible
- New window location, size, and proportion shall be compatible with the existing facade design in scale and pattern with the exception of the Lounge fenestration which may be larger than existing fenestration
- New skylights shall match existing skylights in size, design, and glazing opacity

3. Facade Finish
- See Building A1 (2.2.1) for requirements

4. Color (see Appendix 4.1 for exterior colors)
- Facade color shall match existing (i.e. lighter at street-facing facades and darker at landscape-facing facades)
- Doors shall be the same color as the facade, except where existing doors are painted with accent colors
- Areas of accent color shall match existing color(s) in hue, saturation, and extents
- See Footprint & Facade for guidelines on Supergraphics

5. Details
- Handrails and guardrails shall be painted to match facade, except at areas of existing accent colors - new elements at such locations shall match existing accent colors

6. Water Management
- Runnels and other elements of the site water management system located at the building shall match existing

Fig. 2.2-19
Piazzetta / street-facing facade with accent colors and supergraphic at connection to A1

Fig. 2.2-20
Woods-facing facade with darker color and barn door

Fig. 2.2-21
Piazzetta / street-facing facade and connection to R13

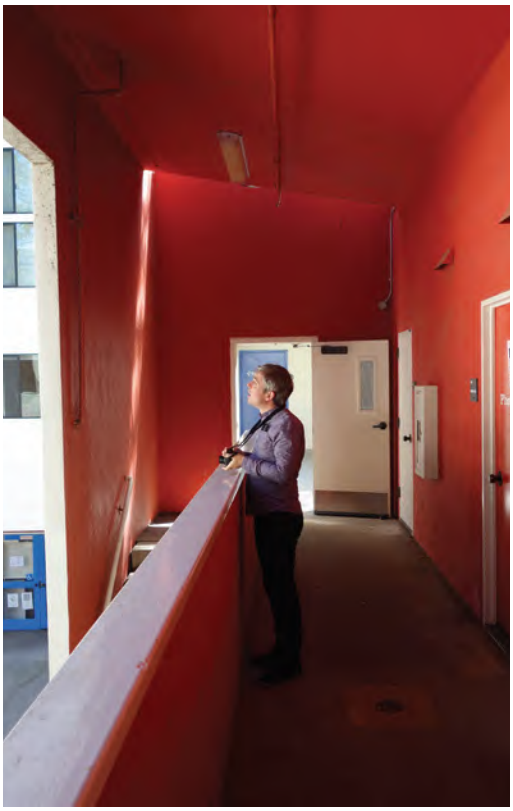


Fig. 2.2-22
Accent colors at upper level covered walkway, north-west stair, and doors

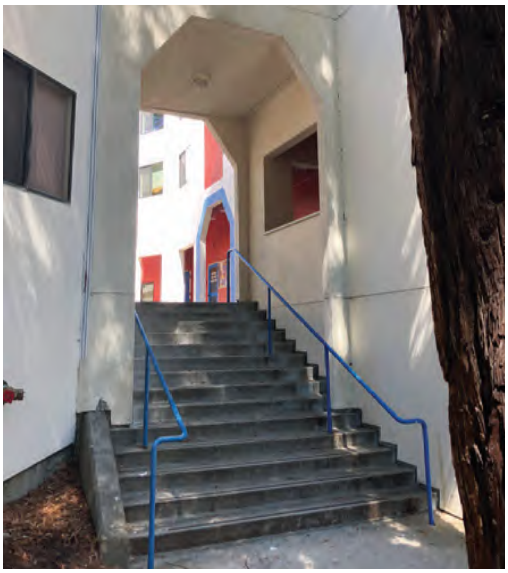
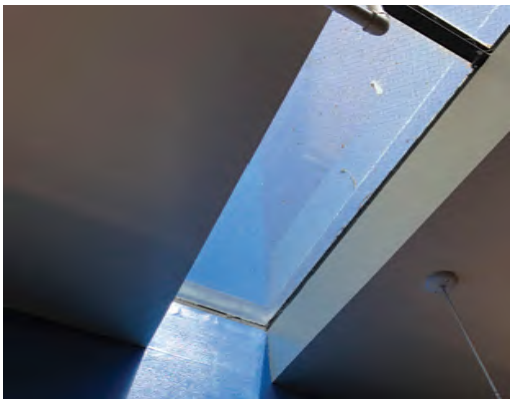


Fig. 2.2-23
Supergraphic and accent railings at opening between R12 and A1



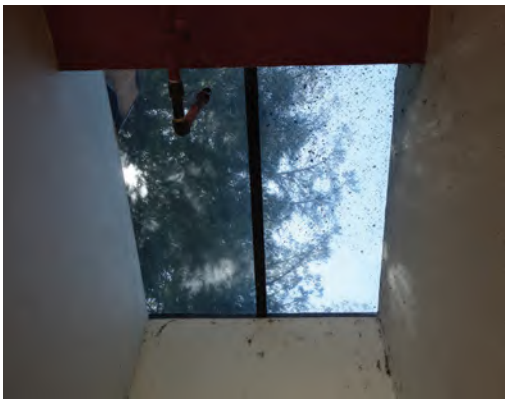


Fig. 2.2-24
Existing skylights

Fig. 2.2-25
Runnel at piazzetta facade (left) and gutters, louvers, and downspouts painted to match building facade (right)

2.2 RENOVATION GUIDELINES

2.2.5 BUILDING R13

1. Footprint & Facade
- The overall building footprint and facade design shall remain as originally designed with the exception of:
  - locations where additional structure and insulation are required
  - modifications to the Recreation (Rec) Room exterior entry for accessibility
- Where doors are replaced, new doors shall match existing doors in design, glazing extents, and paint color
- New sidelites frames shall match the adjacent door frame
- See Fenestration below for guidelines on replacement windows and glazing
- Louvers, downspouts, and other building support systems shall be painted to match the facade color
- See Facade Finish & Color for additional guidelines on color at building facades

2. Fenestration
- Windows shall be simple, low-profile punched openings
- Frames shall be aluminum or other thin-profile
- New windows shall be flush with the exterior facade (any recess required shall be implemented at the building interior)
- Existing fenestration patterns/ alignments shall be maintained to the extent possible
- New window locations, sizes, and proportions shall be compatible with the existing facade design in scale and pattern
- New skylights shall match existing skylights in size, design, and glazing opacity

3. Facade Finish
- See Building A1 (2.2.1) for requirements

4. Color (see Appendix 4.1 for exterior colors)
- Facade color shall match existing (i.e. lighter at street-facing facades and darker at landscape-facing facades)
- Doors shall be the same color as the facade, except where existing doors are painted with accent colors
- Areas of accent color shall match existing color(s) in hue, saturation, and extents

5. Interiors
- Existing double height spaces shall remain double-height
- Rec Room ceiling, soffit, and exposed columns shall match existing design
- Rec Room interior sliding barn door entry to remain

6. Water Management
- Runnels and other elements of the site water management system located at the building shall match existing

Fig. 2.2-26
Street-facing facade with lighter color

Fig. 2.2-27
Street-facing facade (south corner from piazzetta) with connection to R12

Fig. 2.2-28
Woods-facing facade with darker color

Fig. 2.2-29
Existing Student Lounge (proposed Rec Room) facades

Fig. 2.2-30
Accent color and runnel system at covered entry from piazzetta

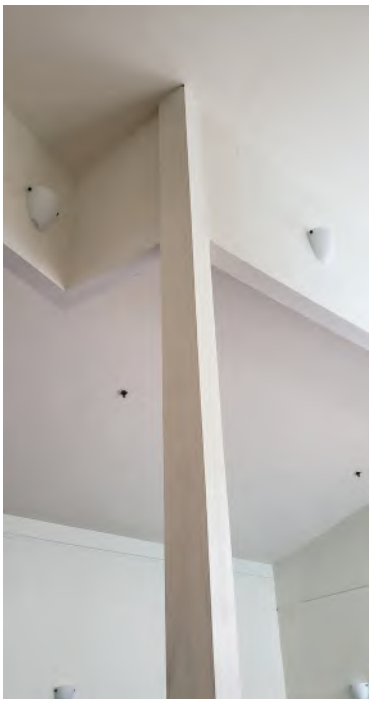
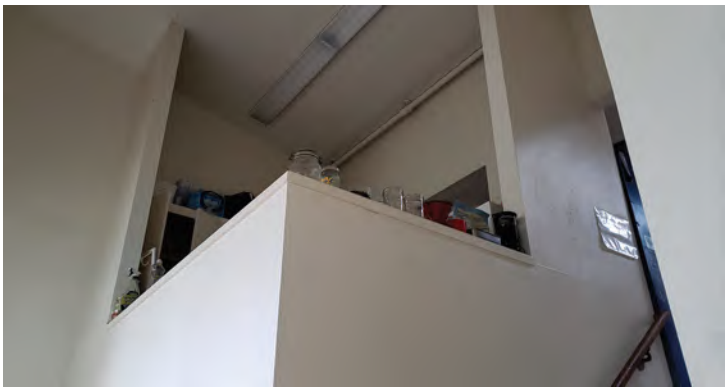


Fig. 2.2-31
Existing Student Lounge (proposed Rec Room) interior

Fig. 2.2-32
Existing Student Lounge interior barn door entry



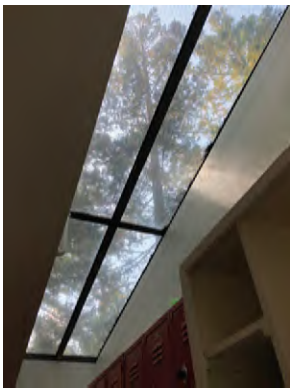


Fig. 2.2-33
Overlook at Level 2 to Student Lounge below (left) and Level 2 skylight (right)

3.0 NEW CONSTRUCTION

3.1 SCOPE & PRINCIPLES

There are seven existing buildings that are intended to be demolished in their entirety and replaced with new construction:

- R1
- R2
- R4
- R6
- R8
- R9
- R10

The Guidelines for New Construction are applicable to these buildings as well as the new Kresge L building (Fig. 3.1-1) and are intended to ensure that new construction at all eight sites remains compatible with the overall Postmodern character of Kresge College.

To aid stakeholders, design teams, and contractors, this section defines overarching design principles for new construction and then uses the existing original buildings at each site to outline more specific character-defining features that should be incorporated into new designs. Note that Kresge L does not require adherence to the character-defining features of the postmodern College but rather may be considered part of a district with Kresge J and K buildings. See Section 3.3 for Kresge L guidelines.

New construction shall convey the following guiding principles:

1. Maintain the building's adjacency with and connection to the pedestrian street
2. Express the main building footprint massing as a simple rectilinear form
3. Highlight circulation, screening, and accent features through shape, color, and rhythm

3.2 CHARACTER-DEFINING FEATURES

The design of new construction shall express the character defining features discussed in this section and illustrated in the figures noted. These features are organized by Site, Facade, Circulation & Add-On Elements, Building Systems & Support, and Materials & Detailing. Notable exceptions to typical features are outlined in Section 3.3

When reviewing these features, it is important to note that each new building will have three primary facades and one secondary facade defined by the original building's site orientation:

- Primary Long Facade: Long facade facing the pedestrian street
- Primary Short Facade(s): Two short facades perpendicular to the street
- Secondary Facade: Long facade facing the landscape

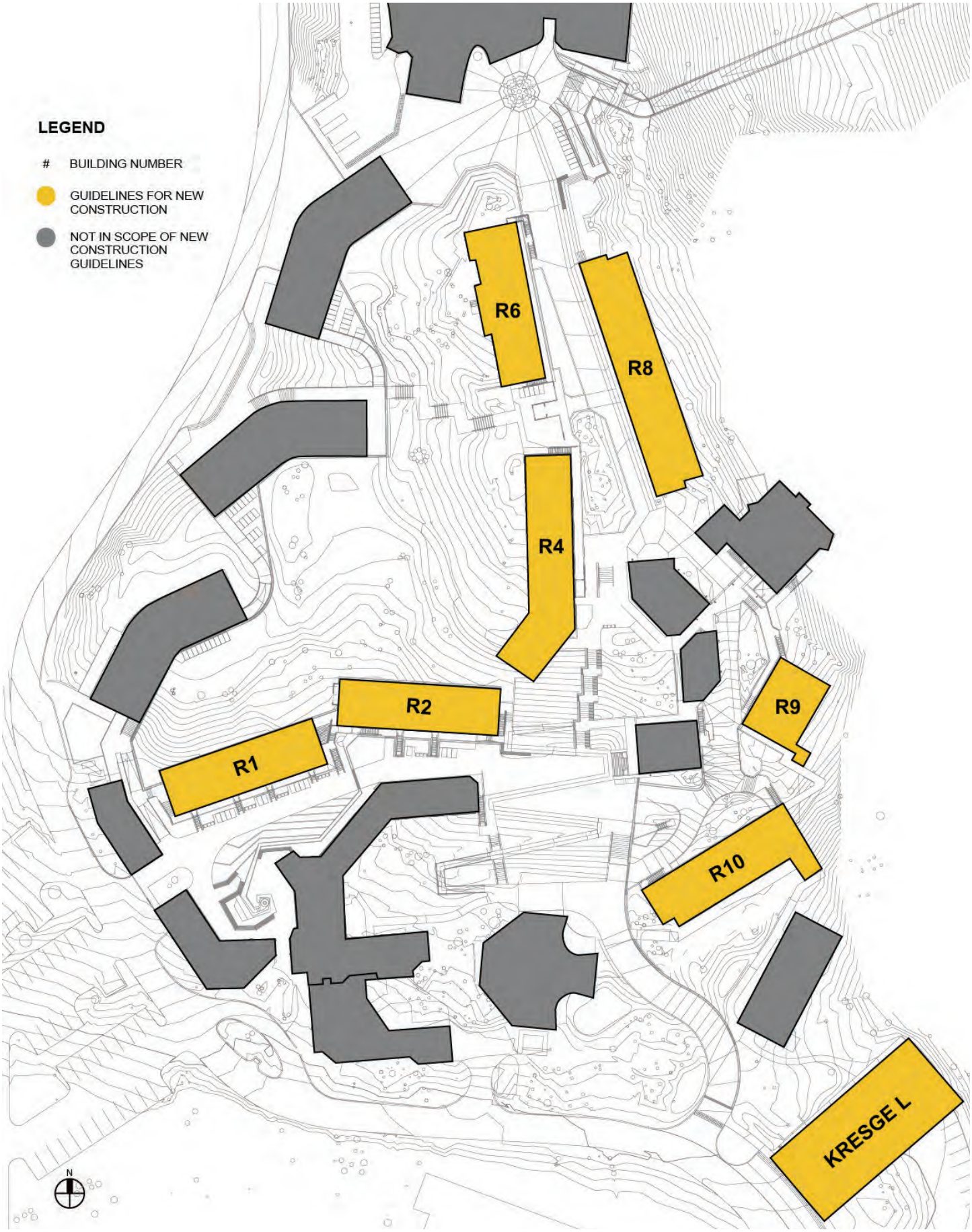


Fig 3.1-1 Site Plan of New Construction Projects (within scope of Guidelines)

3.2 CHARACTER-DEFINING FEATURES

3.2.1 SITE

1. Orientation
- The building's Primary Long facade shall face the pedestrian street
- The building's Primary Short facades shall be perpendicular to the pedestrian street and house primary vertical circulation
- The building's Secondary facade shall face the landscape

2. Building Footprint & Spacing
- The overall design intent is to maintain the original building footprint to the extent possible
- Option A (Fig. 3.2.1-1):
  - New building footprints shall not extend beyond the original main building mass footprint at the Primary Long and Primary Short facades
  - At the Secondary facade only, the footprint may extend beyond that of original
  - Add-on Elements extending from the Primary Short facades may extend beyond their original footprint to accommodate vertical circulation
- Option B (Fig. 3.2.1-2):
  - New building footprints shall not extend beyond the original main building mass footprint at the Primary Long facade only
  - At the Primary Short facades, circulation may be embedded into the main building mass, which would allow this mass to extend beyond the original building massing footprint
  - At the Secondary facade, the footprint may extend beyond that of the original
- Spacing between buildings varies due to site and landscape design constraints. However, the buildings are typically intended to have space and view corridors between them with the exception of R1 and R2, which share an elevator
- Exception: R4 (See Section 3.3)

3. Building Massing
- Overall massing shall be simple, rectangular, and boxy in plan (Fig. 3.2.1-3)
- Add-On Elements (Section 3.2.3) and Color (Appendix 4.1) shall be used to augment the building's main massing

4. Height
- Buildings shall be 3 stories maximum (excluding crawl spaces or other support areas)
- The building's ground level finish floor shall be the same as existing and the overall building height at the Primary Long facade shall be no more than 24" above the original height at the pedestrian street (see Fig. 3.2.1-4)
- Exception: R1, R4, R8, R10 (See Section 3.3)

5. Roof
- The roof line shall be a single pitch, sloping up and away from pedestrian street Note: original roof sloped down from the street (Fig. 3.2.1-4)
- The degree of the pitch shall be match the original roof pitch: 12:2.5 (approx. 11.7°)
- The roof facing the pedestrian street shall include an overhang that meets the Screen Wall (Section 3.2.2)

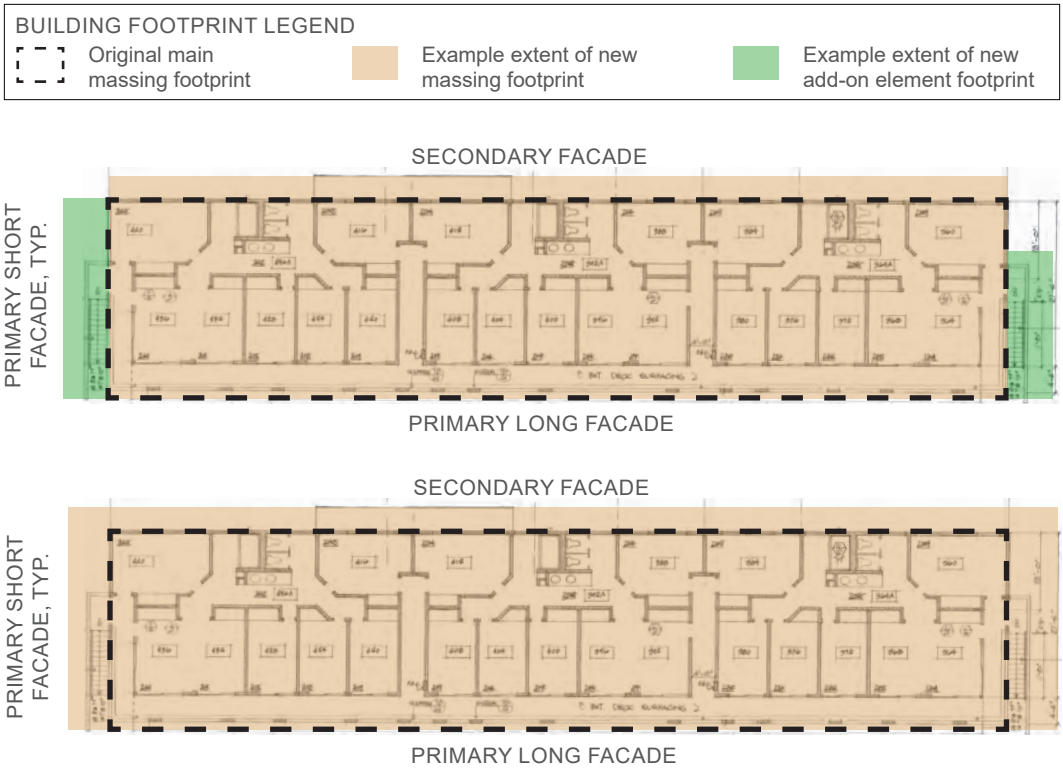


Fig. 3.2.1-1
Option A: Original vs example new building footprint (see Legend)

Fig. 3.2.1-2
Option B: Original vs example new building footprint (see Legend)

Fig. 3.2.1-3
Original main building massing (R8)

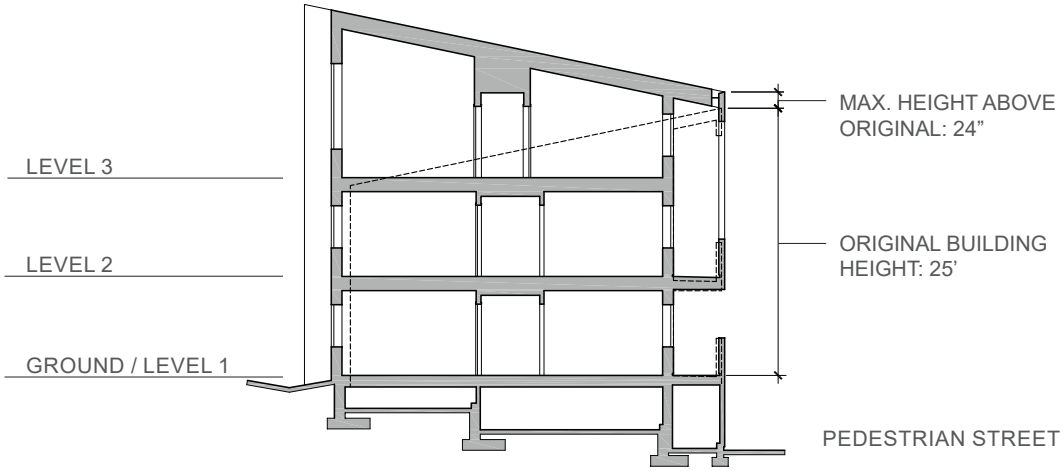


Fig. 3.2.1-4
Typical Building Section: Original height/roof angle (dashed line) vs new height and roof angle

3.2 CHARACTER-DEFINING FEATURES

3.2.2 FACADE

- Exterior Color & Supergraphics: See Appendix 4.1
- Materials & Detailing: See Section 3.2.5

1. Primary Long Facade

Screen Wall (Figure 3.2.2-1)

- Orientation: A screen wall shall be designed at the Primary Long facade
- Height: The screen wall shall span from the second floor to the roof as a double-height volume and meet a roof overhang (Figure 3.2.2-2)
- Extents: Screen wall ends shall not align with the ends of the main building mass and shall either:
  - Extend beyond to connect to and/or screen circulation Add-On Elements (Fig. 3.2.2-1)
  - Stop short and connect to circulation Add-On Elements (Fig. 3.2.2-2)
- Header: The screen wall header shall be 33” high
- Openings: The screen wall shall include openings of (4) different widths with an irregular cadence. Opening widths shall be: (a) 10’, (b) 7’, (c) 4’, or (x) greater than 10’ but no more than 20’ (Fig. 3.2.2-3)
- Verticals: The intermediate verticals that separate openings shall be 2’ wide
- Thickness: The screen wall are intended to maintain their existing thickness
- Gutters: See Water Management (Section 3.2.5)

2. Secondary Facade

- Facade treatments shall be simple and planar
- Simple projected volumes or bays may extend from the facade (Fig. 3.2.2-6)
- Secondary entries may be included as needed (see 3.2.3 Circulation & Add-On Elements for primary entry guidelines)

3. Operable Windows at Punched Openings (Fig. (3.2.2-5)

- There shall be a maximum of 3 levels of fenestration at all Primary facades
- Proportions: Window proportions shall be a 24” wide X 48” tall module, windows shall be no more than four modules wide and two modules tall, full modules only (Fig. 3.2.2-4)
- Alignment: At the Primary Long facade, first and second story windows shall align and match in quantity. Third story windows are encouraged to align with levels below, but may vary based on interior conditions
- Exception: R4, R8, R9 & R10 (see Section 3.3)

4. Storefront

Public Entrances & Lobbies

- Glazed aluminum storefront with integrated glazed aluminum doors may be used to create a light and transparent appearance
- Louvers may be inserted into storefront panels to introduce fresh air where an interior lobby or stair is neither heated nor entirely mechanically ventilated
- To the degree practical, storefront openings shall be full width and full height
- Storefront composition shall align vertically and horizontally with surrounding fenestration pattern

Fig. 3.2.2-1
Highlight of existing Screen Wall (R6)

Fig. 3.2.2-2
Screen Wall stopping short of the main building mass (R1)

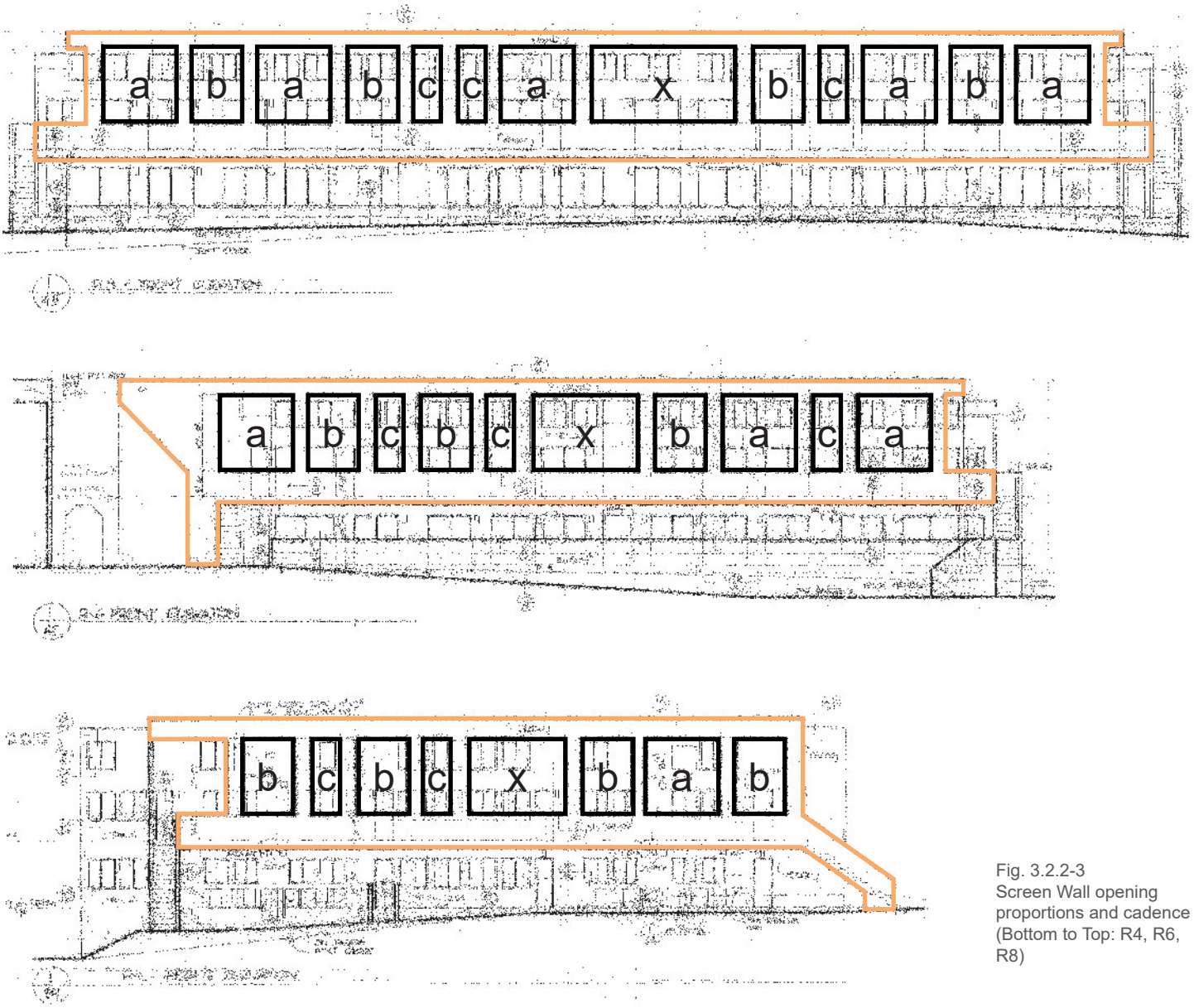


Fig. 3.2.2-3
Screen Wall opening proportions and cadence (Bottom to Top: R4, R6, R8)

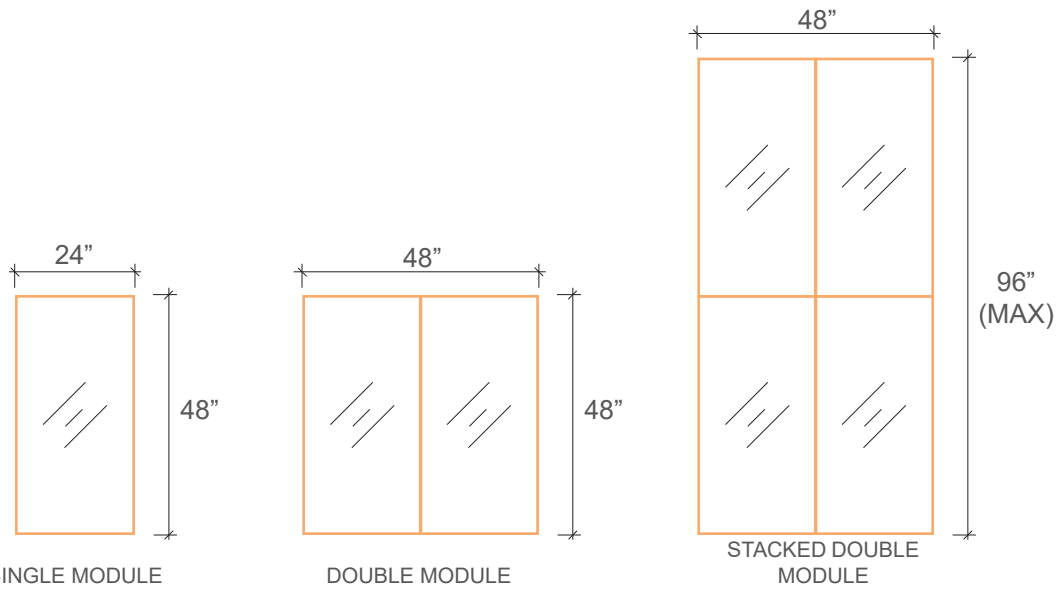


Fig. 3.2.2-4
Window module and example variations

Public Entrances & Lobbies (continued)

- Building entrances may be constructed of hollow metal framing where fire resistive rated construction is required
- Spaces include, but are not limited to: R1/R2 elevator lobbies, R4 elevator Lobby, R9 stair and elevator spaces, R10 rear elevator lobby, R6 Levels 1 through 3 elevator lobby

Public Spaces

- At selected public spaces, entire exterior walls shall be composed of glazed aluminum storefront to maximize indoor-outdoor transparency, views and sight lines, as well as to signify public access
- Operable units may be inserted within storefront to provide natural ventilation and passive cooling
- Spaces include: R4 - Level 0 Study Lounge and R8 - Level 1 Study Lounge

Fig. 3.2.2-5
Existing windows types and alignments (R6)

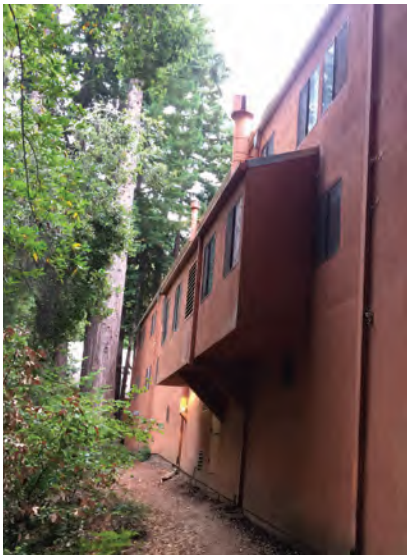


Fig. 3.2.2-7
Existing projections at Secondary facades (Left to Right: R6 & R8)

3.2 CHARACTER-DEFINING FEATURES

3.2.3 CIRCULATION & ADD-ON ELEMENTS

- Exterior Color: See Appendix 4.1

1. Primary Entries
- First & Second Story Apartments: Entries shall be located at the Primary Long facade. Entries shall be direct from the exterior and/or via Add-on Elements.
- Third Story Residence Halls shall have internal circulation via a central interior common corridor

2. Primary Long Facade Add-On Elements

A. First Story Circulation
- Circulation shall be exterior and covered by a second story walkway (see Second Story Circulation)
- At buildings R4, R6, and R8 circulation shall be separated from the pedestrian street via a low wall (Fig. 3.2.3-1)
- Buildings R1, R2, and R4 may include stoops to accommodate grade change between street and apartment level (Fig. 3.2.3-2)

B. Second Story Circulation:
- A cantilevered exterior walkway with a Screen Wall facing the street shall provide circulation to second story unit entries (Fig. 3.2.3-3)
- Walkway shall connect to circulation Add-On Elements at each end of building (Fig. 3.2.3-4 & Fig. 3.2.3-5)

3. Primary Short Facade Circulation (Fig. 3.2.3-4 & Fig. 3.2.3-5):
- Primary vertical circulation (stairs, ramps and/or elevators) shall be located at the Primary Short facades
- Circulation at the Primary Short facades may be add-on elements or embedded into the main building mass (Fig. 3.2.1-1 & Fig. 3.2.1-2)
- Vertical circulation Add-on Elements shall be differentiated from the main building mass through form and color
- Add-on Element massing may incorporate chamfered or angled elements

3.2.4 BUILDING SYSTEMS & SUPPORT

- Building systems shall be concealed whenever possible. The Secondary facade may be used for systems if required
- Mechanical equipment located at the roof shall not be visible from the street
- See 3.2.5 Materials & Detailing for treatments of access panels, vents, and other support elements at the building facade

Fig. 3.2.3-1
Existing first floor entries and pony wall with bench (Kresge College, Morely Baer Photographs - UCSC Archives)

Fig. 3.2.3-2
Existing first floor entry stoop (R1)

Fig. 3.2.3-3
Second floor entries off cantilevered walkway with Screen Wall with continuous linear trench drain (R4)

Fig. 3.2.3-4
Contrasting colors at Add-On Elements (R8)

Fig. 3.2.3-5
Add-On Elements at Primary Short facades (Clockwise Left to Right: R2, R8 & R4)

3.2 CHARACTER-DEFINING FEATURES

3.2.5 MATERIALS & DETAILING

- Exterior Color & Supergraphics: See Appendix 4.1

1. General Requirements
- Materials and detailing shall be simple and uncomplicated in appearance

2. Exterior Materials & Finishes (Fig. 3.2.5-1)
- All building exteriors shall employ a single finish material: stucco with smooth finish
- Reveals between stucco panels shall be concave and chamfered
- The number of panel reveals shall be minimized whenever possible

3. Water Management
- Gutters and downspouts shall be discrete and rectilinear, they shall be painted to match the facade color (Fig. 3.2.5-2)
    - Note: All gutters at the Primary Long facade screen wall shall be located behind the screen wall and not visible from the pedestrian street
- Downspouts and scuppers shall not interrupt architectural features at Primary and Secondary facades (Fig. 3.2.5-3)
- Runnels and basins that convey water from the building shall be concrete and follow the design of the existing water management system (Fig. 3.2.5-4)

5. Windows (Fig. 3.2.5-5)
- Windows shall be simple, low-profile punched openings (not multi-lite)
- Frames shall be aluminum, see Appendix 4.1 for frame color
- Justify window installation to face of exterior facade (recessed at interior side)

4. Circulation Details (Fig. 3.2.5-6)
- Handrails shall be simple with minimal supports and painted to match the Primary Long facade color even if adjacent to an accent color
- Cap rails shall be simple with minimal overhang and composed of a durable exterior material (not wood)

6. Other Details
- Trim details at eaves and other locations shall be minimal protrusions (Fig. 3.2.5-7)
- Access panels, vents, and other support elements at the facade shall be painted to match the facade color (Fig. 3.2.5-8)

7. Lighting & Site Furnishings
- Facade-mounted lighting shall be simple cylinders of a color matching the building facade (Fig. 3.2.5-9)
- Stair step-lighting shall be recessed and of a color matching handrails (Fig. 3.2.5-9)
- Pole-lighting (where occurs) shall match other fixtures found on site (Fig. 3.2.5-10)
- Benches: First story entries at R6 & R8, shall include a cantilevered bench off the pony wall that terminates with a planter box (Fig. 3.2.5-11 & Fig. 3.2.5-12)

8. Wayfinding
- See *Wayfinding Package*

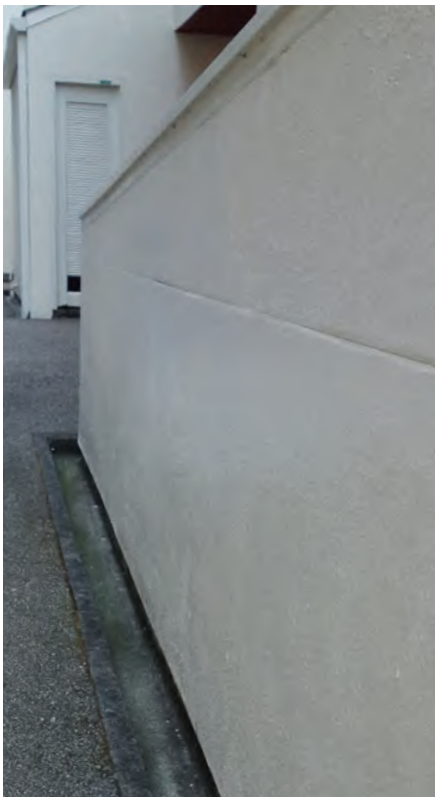


Fig. 3.2.5-1
Existing stucco finish and panel reveal (R1)

Fig. 3.2.5-2
Existing condition of downspouts and gutters at rear of building (Left & Top: R1, Bottom-Right: R6)

Fig. 3.2.5-3
Existing downspout locations that shall not be utilized in new construction (Left to Right: R4 & R2)

Fig. 3.2.5-4
Existing site water management system (R1)

Fig. 3.2.5-5
Existing windows (R4)

Fig. 3.2.5-6
Existing handrails and caprails (Left: R6, Right: R1)

Fig. 3.2.5-7
Existing roof eaves (R1)

Fig. 3.2.5-8
Existing access panels and vents painted to match the facade color (R2)

Fig. 3.2.6-9
Left: Existing facade-mounted lighting (R4)
Right: Existing stair lighting in an incompatible color (R6)

Fig. 3.2.6-10
Existing pole lighting

Fig. 3.2.6-11
Existing bench flush with pony wall (R8)

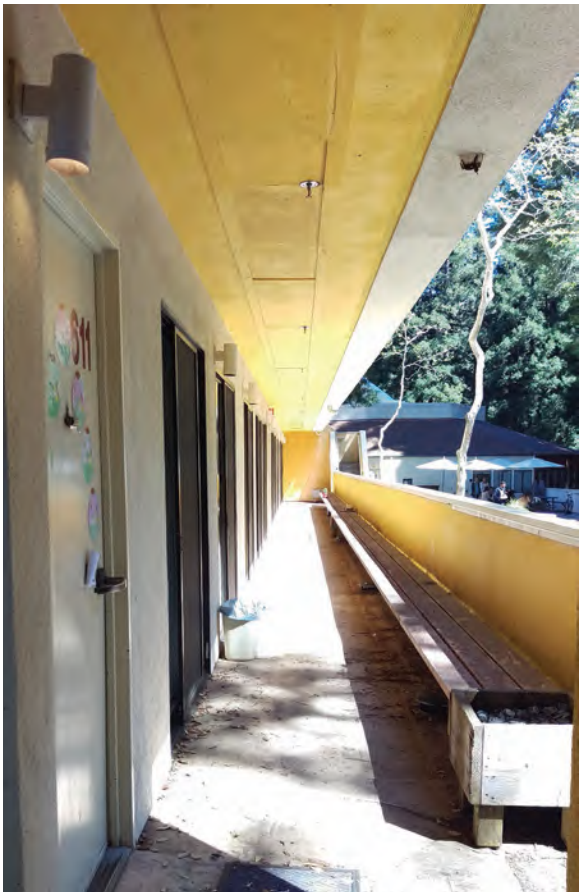


Fig. 3.2.6-12
Existing bench with end planter (R6)

3.3 EXCEPTIONS

3.3.1 Kresge L

Height
- Per SD test fit diagrams, this building is intended to have 3 stories of apartment housing above a podium which accommodates existing planned parking as well as College Housing offices
- Additional stories may be permissible, but should align with the requirements of the EIR

Building Massing and Basic Design Elements
- This new building should have an expressed base, middle and top with varied facade treatment, including storefront glazing at the first level, stucco or wood cladding at the middle, and a unique wood or third material element at the top level
- A pitched roof may be permissible, especially as this building is meant to be in alignment with both Kresge and Porter College design language, or a cornice or other delineating treatment may be employed at the top of the building
- The main entry of the building should be expressed with some manner of canopy

Apartments
- Each apartment should have two bedrooms: one double and one triple sleeping room
    - Exception: In fully mobile units the number of beds may drop to accommodate clearance requirements
- Each sleeping room should have fenestration at a minimum opening of 48”x48”, and each living/dining room should have fenestration at a minimum of 96”x48”

3.3.2 R1

Height
- The ground floor of R1 does not align with the existing ground floor of the original historic building (Fig. 3.3-1 & Fig. 3.3-2)
- Buildings R1 and R2 share a single elevator

3.3.3 R4

Building Footprint & Spacing
- The building may extend beyond the original footprint at the south Primary Short facade to include an angled addition to accommodate site and landscape constraints as well as additional program needs, including the desire to keep the sunniest portion of the college open for student communal use (Fig. 3.3-3)
- Spacing between R4 and R2 is less than 20’, refer to SD drawing G-004 for additional code information

Height
- Building includes a Level 0 (below Level 1) for a total of 4 stories maximum (excluding crawl spaces or other support areas)
- The building’s Level 1 finish floor shall be the same as existing and the overall building height at the Primary Long facade shall be no more than 24” above the original height at the pedestrian street

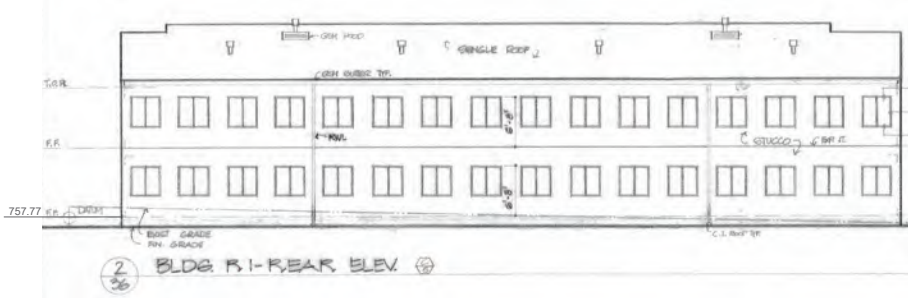


Fig. 3.3-1
Original R1 rear (north) elevation for reference (MLTW, Kresge College Drawings, 1971)

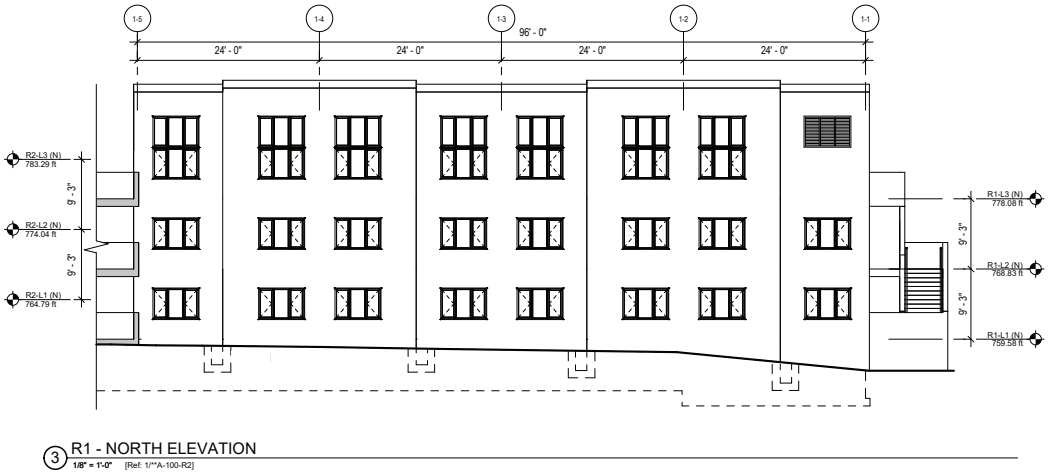


Fig. 3.3-2
Example new R1 Secondary facade (rear) elevation showing the ground level relative to R2 (TEF, SD Drawings, A-200-R1/R2, 2022)

BUILDING FOOTPRINT LEGEND

- Original main massing footprint
- Example extent of new massing footprint
- Example extent of new add-on element footprint

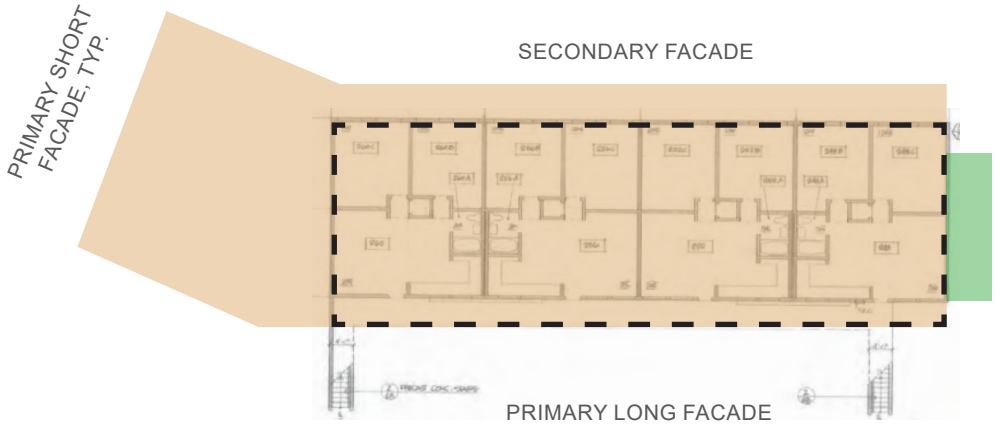


Fig. 3.3-3
R4 original building footprint vs example new building footprint (see Legend)

3.3 EXCEPTIONS

3.3.3 R4 (continued)

Operable Windows at Punched Openings
- At the Secondary facade, the building includes 4 levels of fenestration

3.3.4 R8

Height
- Building includes a Level 0 (below Level 1) for a total of 4 stories maximum (excluding crawl spaces or other support areas) (Fig. 3.3-4 & Fig. 3.3-5)
- The building's Level 1 finish floor shall be the same as existing and the overall building height at the Primary Long facade shall be no more than 24" above the original height at the pedestrian street

Operable Windows at Punched Openings
- At the Secondary facade, the building includes 4 levels of fenestration

3.3.5 R9

Height
- Building includes a Level 0 (below Level 1) for a total of 4 stories maximum (excluding crawl spaces or other support areas)
- The building's Level 1 finish floor shall be the same as existing and the overall building height at the Primary Long facade shall be no more than 24" above the original height at the pedestrian street

Operable Windows at Punched Openings
- At the Secondary facade, the building includes 4 levels of fenestration

3.3.6 R10

Height
- Building include a Level 0 (below Level 1) for a total of 4 stories maximum (excluding crawl spaces or other support areas)
- The building's Level 1 finish floor shall be the same as existing and the overall building height at the Primary Long facade shall be no more than 24" above the original height at the pedestrian street

Operable Windows at Punched Openings
- At the Secondary facade, the building includes 4 levels of fenestration
- At Level 0 of the Secondary facade, windows may incorporate half modules (24" x 24") and/or horizontal modules (48" w x 24" h) stacked on top of the typical 24" w x 48" h module (Fig. 3.3-6)

Fig. 3.3-4
Original R8 rear (east) elevation for reference (MLTW, Kresge College Drawings, 1971)

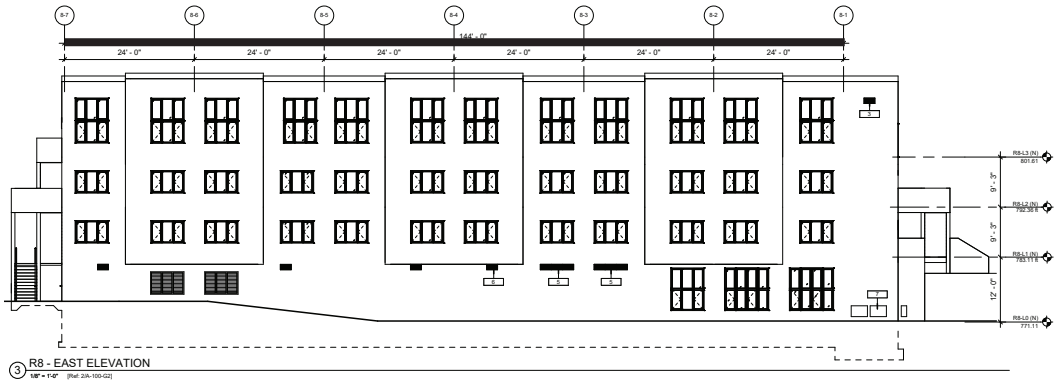


Fig. 3.3-5
Example new R8 Secondary facade elevation showing four levels of fenestration (TEF, SD Drawings, A-200-R8, 2022)

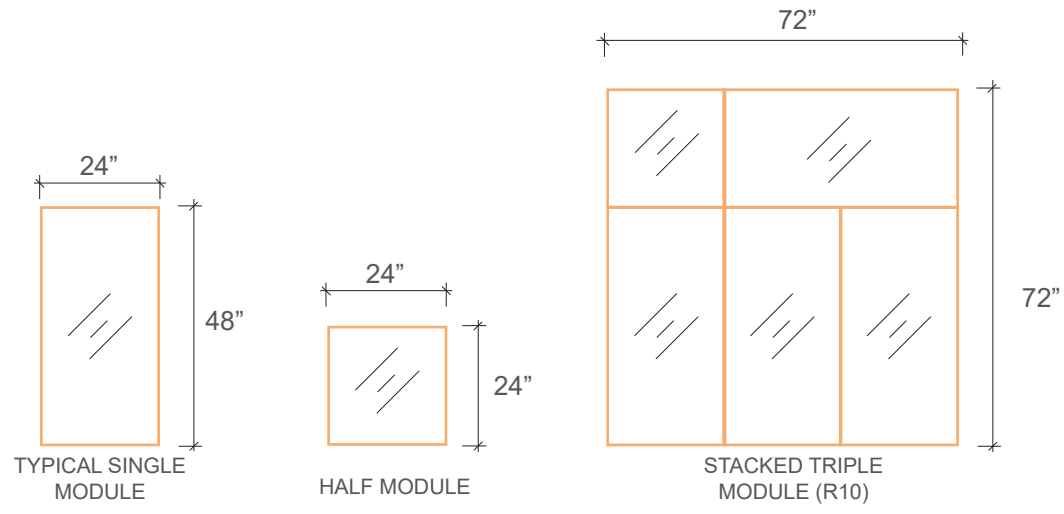


Fig. 3.3-6
R10 window modules and example variations

4.0 APPENDICES

4.1 EXTERIOR COLOR & SUPERGRAPHICS

1. General Requirements
- Colors identified in this appendix are called out generically for the purpose of distinguishing one color from another. All colors shall match the original MLTW design intent and shall be verified by the Master Architect (Fig. 4.1.1-1).
- Note that colors currently existing at Kresge College may be inconsistent with the original MLTW design intent.
- The transition from one color to another shall occur at changes in plane, massing, or material (rail caps, etc)

2. Facade Color (Fig. 4.1.2-1 & Fig. 4.1.2-2)
- White color shall be used at the Primary Long Facade
- Rust color shall be at the Secondary Facade
- Primary Short facades shall be white color when facing an intentional circulation path
- Primary Short facades shall be rust color when it faces trees/forest or other area without intentional circulation
- Add-On Elements shall be white color, typically, on their exterior facing planes, unless said plane(s) is coplanar with a Primary short facade that is rust color.

3. Accent Colors (Fig. 4.1.3-1 & Fig. 4.1.3-2)
- Planes of color shall typically be used to highlight:
  - Interior face of screen walls
  - Recessed entries
  - Underside of roof overhangs, balconies, and building cantilevers
  - Interior face of Add-On Elements (stairs, pony walls, ramp walls, etc)
  - trivial monuments
- See Fig. 4.1.3-3 for site plan of accent color locations
- See Fig. 4.1.3-4 for site plan of primary facade wall colors

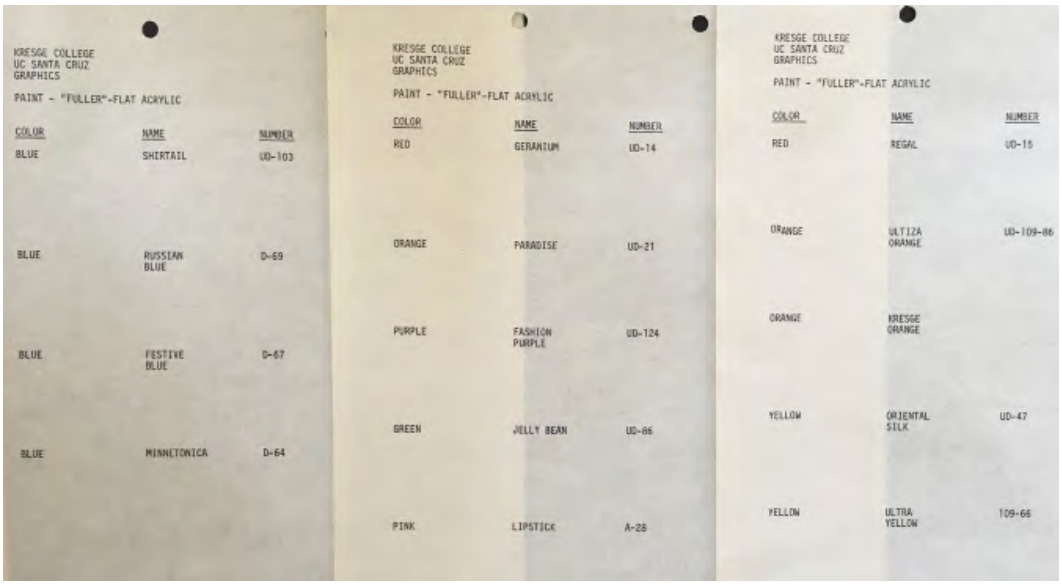
4. Supergraphics (Fig. 4.1.4-1)
- Facade supergraphics shall be applied at locations of historic graphics and match in scale, color, and original design

5. Student Murals (Fig. 4.1.5-1)
- Student-created murals are an important aspect of the culture at Kresge College
- Mural opportunities shall be provided at pony walls of residential (new construction) buildings at minimum, in their existing locations at buildings R6 and R8. Additional opportunities may occur at R1, R2, R4, R9, and R10.

6. Windows, Doors, Roof, and Miscellaneous (Fig. 4.1.6-1)
- Window frame and trim colors shall be of black color that matches the original MLTW

design intent. Window trim shall be minimal in thickness.

- Public doors at Renovation buildings may be an accent color to match original MLTW design intent.
- Private residence doors at New Construction shall match the color of the plane they occupy.
- Roof color shall match original MLTW design intent.
- Building components including but not limited to downspouts, louvers, and access panels shall match the color of the plane they occupy



KRESGE COLLEGE
UC SANTA CRUZ
GRAPHICS

PAINT - "FULLER"-FLAT ACRYLIC

COLOR	NAME	NUMBER
BLUE	SHIRTAIL	UD-103
BLUE	RUSSIAN BLUE	D-69
BLUE	FESTIVE BLUE	D-67
BLUE	MINNETONKA	D-64

KRESGE COLLEGE
UC SANTA CRUZ
GRAPHICS

PAINT - "FULLER"-FLAT ACRYLIC

COLOR	NAME	NUMBER
RED	GERANIUM	UD-14
ORANGE	PARADISE	UD-21
PURPLE	FASHION PURPLE	UD-124
GREEN	JELLY BEAN	UD-86
PINK	LIPSTICK	A-28

KRESGE COLLEGE
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GRAPHICS

PAINT - "FULLER"-FLAT ACRYLIC

COLOR	NAME	NUMBER
RED	REGAL	UD-15
ORANGE	ULTIZA ORANGE	UD-109-86
ORANGE	KRESGE ORANGE	
YELLOW	ORIENTAL SILK	UD-47
YELLOW	ULTRA YELLOW	109-66

Fig. 4.1.1-1
Original accent colors (Kresge College, UCSC Archives)

Fig. 4.1.2-1
Rust color used at secondary facades (R12, R13) (Kresge College, Morely Baer Photographs - UCSC) Archives)

Fig. 4.1.2-1
White color used at the Primary Long Facade (R8) (Kresge College, Morely Baer Photographs - UCSC) Archives)

Fig. 4.1.2-2
White add-on elements (Left to Right: A1 & R6) (Kresge College, Morely Baer Photographs - UCSC) Archives)

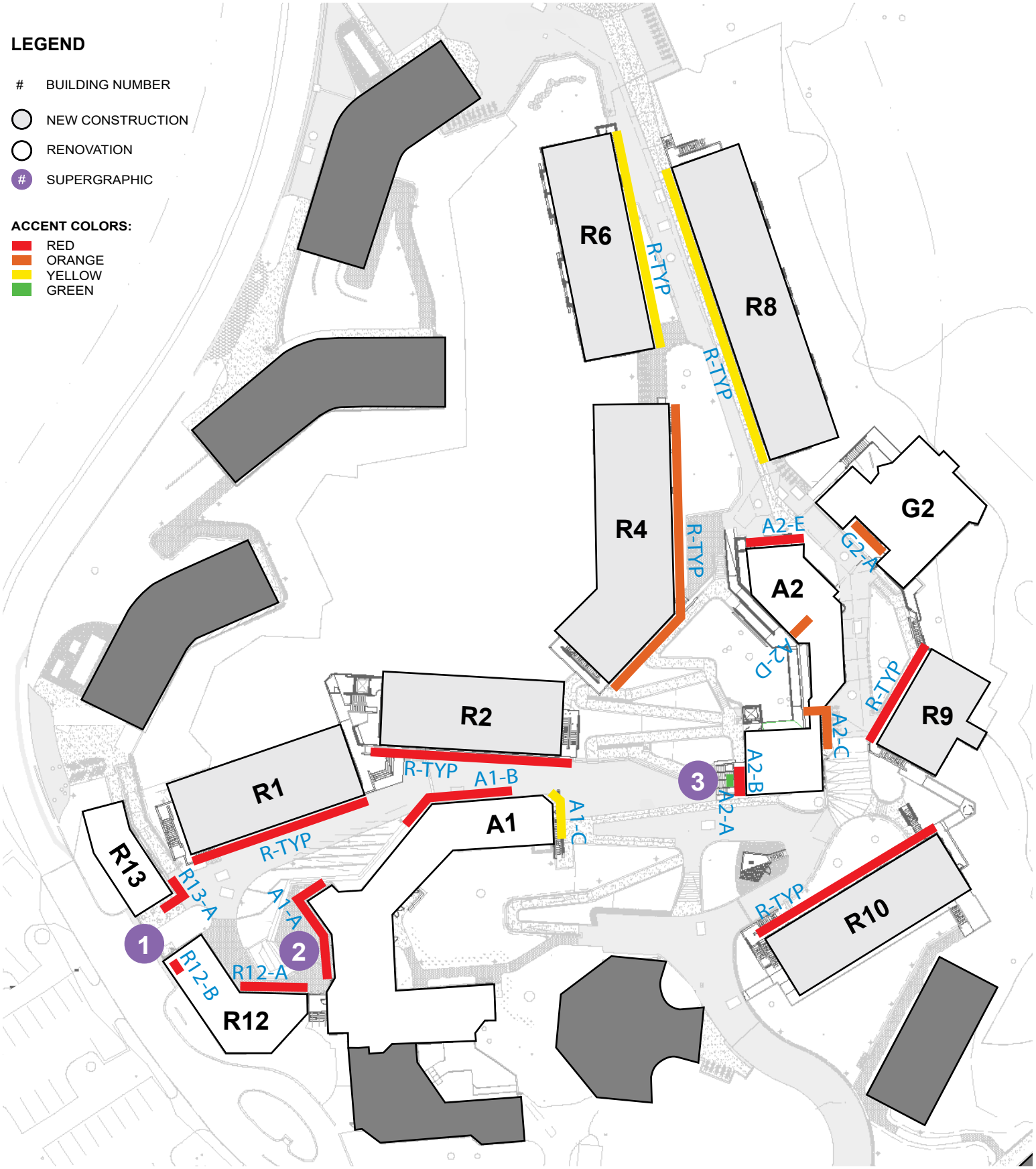
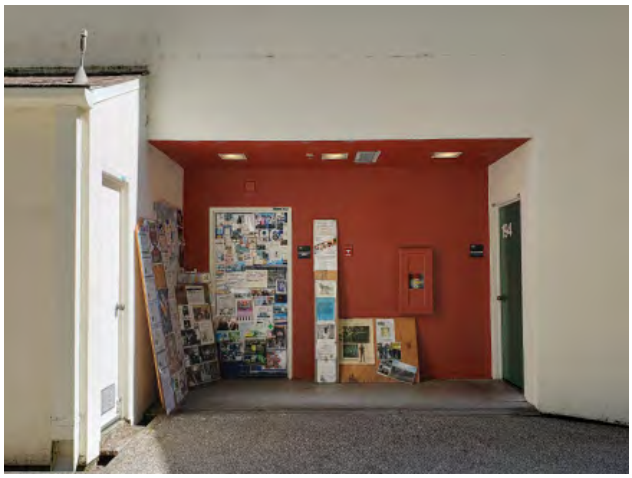


Fig 4.1.3-3 Accent Color and Supergraphic Site Plan

Fig 4.1.3-4 Primary Wall Color Site Plan



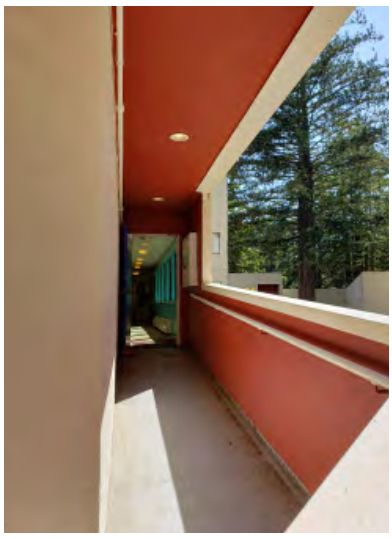


Fig. 4.1.3-1
Accent color on underside of balconies, stairs, walkways, ramps, interior face of screen walls, recessed entries (Kresge College, Morely Baer Photographs - UCSC) Archives)

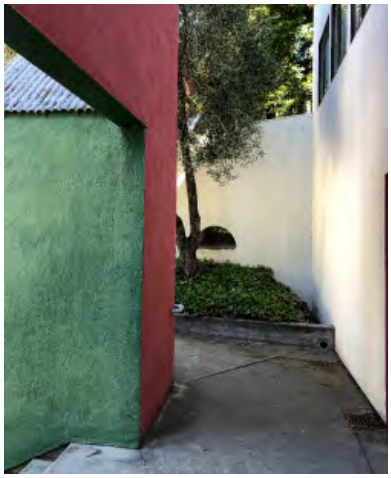


Fig. 4.1.3-2
Accent color on interior faces of trivial monuments (Left: A1, Right: A2) (Kresge College, Morely Baer Photographs - UCSC)

Fig. 4.1.3-2
Accent color on face of add-on elements (Left: G2/A2 Historic Archway, Right: R8) (Kresge College, Morely Baer Photographs - UCSC) Archives)

Fig. 4.1.3-1
Accent color on underside of balconies, ceilings (Left: R6 - TEF Photo, Right: R8 - Kresge College, Morely Baer Photographs - UCSC Archives)

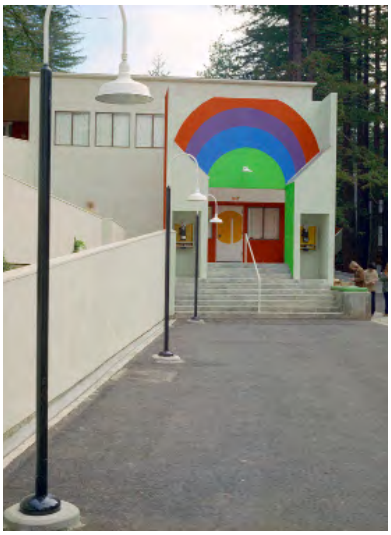


Fig. 4.1.4-1
Supergraphics to be replicated and match scale, color, and original design. (Clockwise from top left: Piazzetta, R12, A1, R12, A2) (Kresge College, Morely Baer Photographs - UCSC)

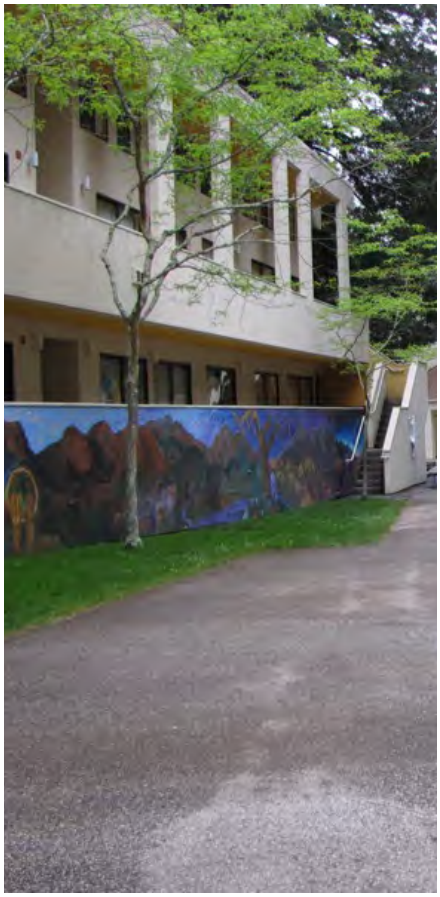


Fig. 4.1.5-1
Student-created murals at street-facing pony walls (Top and Bottom Left: R6, Bottom Right: R8)

Fig. 4.1.6-1
Wall openings and roofs (Left: G2), doors (Right: A2) (Kresge College, Morely Baer Photographs - UCSC) Archives)

Fig. 4.1.6-1
Wall openings and windows (A1) (Kresge College, Morely Baer Photographs - UCSC) Archives)

Fig. 4.1.6-1
Accent color public doors (Bottom Left, present day A1, Bottom Right: Original A1) (Kresge College, Morely Baer Photographs - UCSC) Archives)

DESIGN GUIDELINES
KRESGE COLLEGE

Prepared by : TEF Design